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Vital and Health Statistics

Advance Data From Vital and Health Statistics: Numbers 1-10

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May 1989

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control

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Vital and Health Statistics

Advance Data From Vital and Health Statistics: Numbers 1-10

Series 16: Compilations of Advance Data From Vital and Health Statistics No. 1

Data in this report from health and demographic surveys present statistics by age and other variables on hypertension; height and weight; dermatological disease; cholesterol levels; dietary intake; wanted and unwanted births; and expected family size among currently married women. Estimates are based on the civilian noninstitutionalized population of the United States. These reports were originally published in 1976 and 1977.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 1 October 18, 1976 | Public Health Service • Health Resources Administration

Blood Pressure of Persons 6-74 Years of Age in the United States[a]

Single blood pressure measurements were obtained among a national probability sample of persons representative of the U.S. civilian noninstitutionalized population 6-74 years of age in the Health and Nutrition Examination Survey (HANES) from April 1971 through June 1974.

This first Health and Nutrition Examination Survey program, in which these data were obtained, was designed to measure the nutritional status of the U.S. population as well as certain aspects of the general health status and medical care needs of the U.S. population. This is the fourth of the Health Examination Survey programs that obtain information on the prevalence of medically defined illness, on unrecognized or undiagnosed conditions, and on a variety of physical, physiological, and psychological measures within the population through direct examinations, tests, and measurements, as described in previous publications.[1-4]

Blood pressure measurements of the persons in this HANES sample were made at 65 preselected locations throughout the country by the survey examining physicians using standardized methods based on the 1951 recommendations of the American Heart Association.[5] Of the 24,513 sample persons selected to represent the 131.4 million persons 6-74 years of age in the U.S. population, 17,796 (or 72.6 percent) were examined. This corresponds to an effective response rate of 74.4 percent when adjustment is made for the effect of oversampling among the poor, preschool children, women of childbearing age, and the elderly. National estimates of the distribution of blood pressure levels, prevalence of hypertension, and related medical history among the U.S. population based on findings from this HANES program have been described and analyzed in the report "Blood Pressure Levels of Persons 6-74 Years: United States, 1971-1974," *Vital and Health Statistics*, Series 11, No. 203[6] (in preparation). Selected data and findings from that report are included here in tables 1-6.

Highlights

Mean systolic blood pressure of the U.S. population increases with age from 103.3 mm.

[a]This report prepared by Jean Roberts and Kurt Maurer, Division of Health Examination Statistics.

Advance Data from Vital and Health Statistics replaces the supplements to the *Monthly Vital Statistics Report* as the means for early release of selected findings from the health and demographic surveys conducted by the NCHS. Most of these releases will be followed by detailed reports in the *Vital and Health Statistics* series.

Provisional vital statistics as well as advance reports of final data for a year will continue to be published in the *Monthly Vital Statistics Report*.

Advance Data is being distributed on the mailing keys for the *Vital and Health Statistics* series, and people who now receive reports from a particular series will also receive all *Advance Data* releases for that series. Temporarily, the mailing list for the *Monthly Vital Statistics Report (MVSR)* is also being used. *MVSR* readers who wish to continue to receive *Advance Data* issues, as well as other persons who wish to receive all issues, should contact: National Center for Health Statistics, Room 8-20, 5600 Fishers Lane, Rockville, Maryland 20852, Phone: (301) 443-1200.

Hg among children age 7-11 years to 150.1 mm. Hg among the oldest adults in the study, those ages 65-74 years. From 12 through 54 years of age the mean levels of systolic pressure among males exceed those for females, but from 55 through 74 years, the mean levels of women are the higher.

Diastolic pressure (mean values) of males increases with age and significantly exceeds mean levels of women from 18 through 54 years then decreases slowly through 74 years, while among women diastolic pressure levels off at ages 65-74 years but does not decrease significantly.

At 25-74 years of age, systolic and diastolic mean pressures for Negro men exceed those for white men, and those for Negro women exceed the mean levels for white women.

Mean systolic and diastolic blood pressures among the population decrease significantly with an increase in family income and education.

While no regional differences in mean diastolic blood pressure is evident, mean systolic blood pressure of persons living in the South is significantly higher for both white and Negro men and women than for those living in the Northeast or West.

There were an estimated 23.4 million persons 12-74 years of age, including 23.2 million or 18.1 per 100 adults ages 18-74 years, in the United States with definite hypertension—that is either systolic blood pressure of at least 160 mm. Hg *or* diastolic blood pressure of at least 95 mm. Hg. The prevalence rate of definite hypertension, as defined here, increases rapidly with age from 0.8 per 100 at ages 12-17 years to 40.7 per 100 at ages 65-74 years. At ages 18-54 years, definite hypertension is more prevalent among men than among women, but at ages 65-74 years the condition is more prevalent among women than among men. About one-fourth of the adults with definite hypertension have diastolic blood pressure of at least 105 mm. Hg.

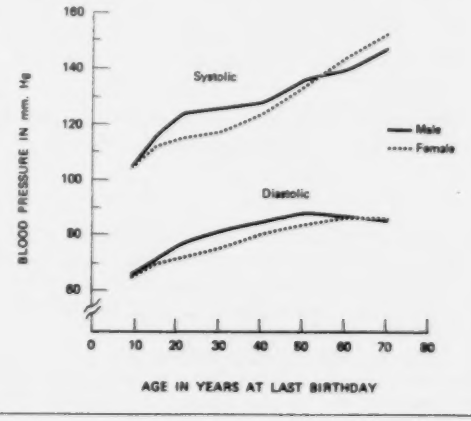
Hypertension is substantially more prevalent among Negro adults than among white adults in the United States.

More than half of the adults with definite hypertension have never been told by their doctors that they have this condition or high blood pressure. One-fourth of those with definite hypertension have been taking medication regularly or occasionally for high blood pressure within the preceding 6 months.

Mean systolic blood pressure levels of U.S. children and youths as determined in the present 1971-74 study are substantially lower and the mean diastolic pressures somewhat lower than those national estimates for children from the Health Examination Survey of 1963-65 and for youths from the Health Examination Survey of 1966-70, apparently because of survey differences that have been analyzed in detail.[6]

Among adults 18-74 years, national estimates of mean systolic and diastolic blood pressure levels from the Health and Nutrition Examination Survey of 1971-74 are in closer agreement with those from the Health Examination Survey of 1960-62 than with those for children and youths at the two available points in time. Mean systolic blood pressure level estimates for U.S. adults ages 18-54 years are nearly identical from both surveys, but from 55 through 74 years they are lower by an average of 4-8 mm. Hg in 1971-74 than in 1960-62. The diastolic pressure levels from the more recent survey are consistently higher (by an average of 3 mm. Hg) across the age range 18-74 years.

MEAN SYSTOLIC AND DIASTOLIC BLOOD PRESSURE OF PERSONS 7-74 YEARS BY AGE AND SEX: UNITED STATES, 1971-74



TECHNICAL NOTES

The sampling plan for the 65 examination locations in the Health and Nutrition Examination Survey of 1971-74 followed a stratified, multistage probability design in which a sample of the civilian noninstitutionalized population of the conterminous United States 1-74 years of age was selected. The sample was stratified by geographic region, population density, and rate of population change between 1960 and 1970. Within each stratum, cluster type sampling was used for selecting households and sample persons to be included in each examination location. The sample design provided for oversampling among persons living in poverty areas, preschool age children, and women 20-44 years of age.

The blood pressure level and related data in this report are shown as population estimates, that is, the examination findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and a poststratified ratio adjustment were also made so that the final sample estimates of the population size agree exactly with independent U.S. Bureau of Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by color, sex, and age.

The tables in this report contain, for the various statistics presented, estimates of their sample variability (standard or sampling errors of the mean) which have been specially derived by a pseudoreplication method adapted specifically to the sample design used in the Health and Nutrition Examination Survey.[7] Data in the tables exclude 6-year-olds because no measurements were obtained for about one-fourth of this group, and the estimates for them are consequently less reliable than for those 7-74 years of age.[6]

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[4] National Center for Health Statistics: Plan and operation of the Health and Nutrition Examination Survey, United States, 1971-73. *Vital and Health Statistics.* Series 1-Nos. 10a and 10b. DHEW Pub. No. (HSM) 73-1310. Washington. U.S. Government Printing Office, Feb. 1973.

[5] Committee to Revise Standardization of High Blood Pressure Readings: Recommendations for human blood pressure determinations by sphygmomanometers. New York. American Heart Association. Oct. 1951.

[6] National Center for Health Statistics: Blood pressure levels of persons 6-74 years of age in the United States. *Vital and Health Statistics.* Series 11-No. 203. DHEW, Rockville, Md. In preparation.

[7] National Center for Health Statistics: Replication: An approach to the analyses of data from complex surveys. *Vital and Health Statistics.* PHS Pub. No. 1000-Series 2-No. 14. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1966.

Table 1. Systolic and diastolic blood pressure of persons 7-74 years by age and sex, with means, standard deviations, and standard error of means: United States, 1971-74

Blood pressure and age	Both sexes			Male			Female		
	Mean	Standard deviation	Standard error of mean	Mean	Standard deviation	Standard error of mean	Mean	Standard deviation	Standard error of mean
SYSTOLIC	Blood pressure in mm. Hg								
7-11 years	103.3	12.1	0.68	103.3	12.0	0.65	103.3	12.3	0.93
12-17 years	113.4	13.7	0.55	114.9	13.8	0.65	111.9	13.4	0.57
18-24 years	119.0	13.8	0.47	123.5	13.0	0.67	114.8	13.1	0.59
25-34 years	120.9	14.7	0.46	125.5	13.9	0.64	116.7	14.1	0.45
35-44 years	125.6	17.6	0.57	127.7	15.4	0.81	123.6	19.2	0.64
45-54 years	136.1	22.7	1.03	135.3	20.7	1.23	132.9	24.4	1.28
55-64 years	142.0	23.5	0.79	139.7	20.8	1.16	144.0	25.6	0.94
65-74 years	150.1	25.2	0.83	146.9	24.7	1.05	152.5	25.2	0.98
DIASTOLIC									
7-11 years	64.7	9.8	0.61	65.1	9.6	0.57	64.3	10.0	0.78
12-17 years	69.8	9.9	0.40	70.5	10.0	0.38	69.0	9.7	0.58
18-24 years	73.8	10.6	0.41	76.3	10.0	0.52	71.5	10.2	0.52
25-34 years	77.8	10.9	0.30	81.1	10.3	0.48	74.9	10.6	0.30
35-44 years	82.4	12.2	0.39	84.8	11.5	0.55	80.2	12.5	0.48
45-54 years	85.7	13.6	0.60	87.9	13.1	0.68	83.6	13.7	0.67
55-64 years	86.7	12.5	0.47	86.8	12.3	0.68	86.6	12.7	0.55
65-74 years	85.7	13.0	0.50	85.4	13.2	0.57	85.9	12.9	0.57

Table 2. Systolic and diastolic blood pressure of white and Negro persons 7-74 years by age and sex, with means and standard error of means: United States, 1971-74

Blood pressure and age	White						Negro					
	Both sexes		Male		Female		Both sexes		Male		Female	
	Mean	Standard error of mean	Mean	Standard error of mean	Mean	Standard error of mean	Mean	Standard error of mean	Mean	Standard error of mean	Mean	Standard error of mean
SYSTOLIC	Blood pressure in mm. Hg											
7-11 years	103.3	0.70	103.6	0.67	103.1	0.99	103.2	1.18	102.1	1.32	104.2	1.34
12-17 years	113.6	0.54	115.1	0.67	112.0	0.59	112.0	1.17	112.5	1.46	111.6	1.22
18-24 years	119.3	0.51	123.7	0.75	115.1	0.61	117.5	1.26	122.9	2.20	113.2	1.11
25-34 years	120.4	0.49	125.2	0.67	116.2	0.51	125.2	0.88	129.3	1.61	121.5	0.96
35-44 years	124.8	0.61	127.0	0.88	122.6	0.68	132.8	1.19	136.7	2.29	130.5	1.52
45-54 years	132.8	1.04	134.7	1.15	131.1	1.30	146.4	4.24	141.7	4.23	150.8	5.69
55-64 years	141.3	0.78	139.6	1.08	143.0	1.00	149.7	2.97	144.2	3.57	153.4	4.44
65-74 years	149.2	0.85	146.0	1.06	151.6	1.07	159.3	2.69	156.6	3.57	161.3	2.88
DIASTOLIC												
7-11 years	64.8	0.64	65.3	0.57	64.2	0.86	64.3	0.83	63.8	1.20	64.8	0.89
12-17 years	69.7	0.40	70.4	0.43	69.0	0.60	70.2	0.82	71.1	0.95	69.3	1.02
18-24 years	73.8	0.43	76.4	0.57	71.3	0.53	74.2	0.78	76.2	1.03	72.7	1.02
25-34 years	77.5	0.35	80.8	0.57	74.6	0.31	81.0	0.86	84.3	1.60	78.0	0.95
35-44 years	81.7	0.40	84.2	0.57	79.3	0.51	88.5	0.97	91.2	1.43	86.9	1.29
45-54 years	84.9	0.61	87.5	0.68	82.6	0.68	92.7	1.82	91.9	2.45	93.5	2.20
55-64 years	86.3	0.45	86.4	0.66	86.2	0.53	91.7	1.77	93.4	2.23	90.6	2.23
65-74 years	85.2	0.55	84.9	0.61	85.4	0.64	90.6	0.96	90.9	1.20	90.4	1.31

Table 3. Systolic and diastolic blood pressure of persons 7-74 years by geographic region, annual family income, and sex, with means, age-adjusted means, and standard error of means: United States, 1971-74

Blood pressure, region, and annual family income	Both sexes 7-74 years			Male 7-74 years			Female 7-74 years		
	Mean	Age-adjusted mean	Standard error of mean	Mean	Age-adjusted mean	Standard error of mean	Mean	Age-adjusted mean	Standard error of mean
GEOGRAPHIC REGION	Blood pressure in mm. Hg								
Systolic:									
Northeast	123.4	123.1	0.91	124.0	124.1	0.81	122.8	122.0	1.15
Midwest	124.2	124.7	0.65	125.8	126.0	0.75	122.5	123.2	0.79
South	127.6	127.0	0.86	127.5	127.2	1.12	127.7	127.0	0.89
West	122.5	122.7	0.94	124.4	124.4	1.14	120.7	121.3	0.99
Diastolic:									
Northeast	77.3	77.2	0.72	78.3	78.4	0.62	76.3	75.9	0.95
Midwest	78.2	78.4	0.37	79.7	79.7	0.34	76.6	77.0	0.51
South	78.8	78.5	0.57	79.7	79.6	0.69	77.9	77.6	0.62
West	77.0	77.2	0.80	78.8	78.8	0.79	75.3	75.7	0.97
ANNUAL FAMILY INCOME									
Systolic:									
Less than $5,000	130.4	126.4	0.74	128.6	126.6	1.23	131.6	126.3	0.82
$5,000-$9,999	124.2	124.7	0.63	125.4	125.6	0.60	123.1	124.0	0.84
$10,000 or more	122.0	123.3	0.40	124.3	124.8	0.46	119.5	121.8	0.54
Diastolic:									
Less than $5,000	79.6	78.5	0.53	79.6	79.5	0.77	79.7	77.9	0.55
$5,000-$9,999	77.9	78.3	0.41	79.1	79.4	0.40	76.8	77.2	0.56
$10,000 or more	77.1	77.3	0.31	79.1	78.8	0.35	74.9	75.6	0.41

Table 4. Prevalence rates of definite hypertension among persons 18-74 years by age and sex, with standard errors, population estimates, and proportion with this condition not previously diagnosed: United States, 1971-74

Condition and age	Both sexes			Men			Women		
	Rate per 100 population	Standard error of rate	Population estimate in thousands	Rate per 100 population	Standard error of rate	Population estimate in thousands	Rate per 100 population	Standard error of rate	Population estimate in thousands
DEFINITE HYPERTENSION, TOTAL[1]	18.1	0.58	23,171	19.2	0.77	11,656	17.1	0.76	11,515
18-24 years	3.1	0.58	738	4.8	1.10	544	1.6	0.31	194
25-34 years	6.6	0.67	1,777	9.1	1.34	1,159	4.4	0.51	618
35-44 years	15.5	1.12	3,492	18.9	1.92	2,043	12.3	1.01	1,449
45-54 years	24.2	1.64	5,702	26.8	2.12	3,022	21.9	1.91	2,680
55-64 years	33.2	1.66	6,257	32.3	2.18	2,875	34.0	2.08	3,382
65-74 years	40.7	1.60	5,205	36.6	1.74	2,014	43.9	2.03	3,191
DEFINITE HYPERTENSION NOT PREVIOUSLY DIAGNOSED, TOTAL[2]	54.9	1.29	12,712	62.9	1.76	7,333	46.7	1.67	5,379
18-24 years	68.5	9.45	505	69.5	12.62	378	65.5	9.27	127
25-34 years	65.5	5.24	1,165	66.9	7.57	776	63.0	5.33	389
35-44 years	57.9	3.13	2,021	61.6	5.18	1,258	52.6	4.03	763
45-54 years	60.6	3.22	3,458	65.1	3.82	1,967	55.6	4.42	1,491
55-64 years	48.6	3.10	3,039	60.4	4.13	1,738	38.5	4.49	1,301
65-74 years	48.5	1.76	2,525	60.5	2.24	1,216	41.0	2.30	1,308

[1] Systolic blood pressure of at least 160 mm. Hg or diastolic blood pressure of at least 95 mm. Hg.
[2] Proportion of persons with definite hypertension, as defined in footnote 1, who have never been told by their doctors that they had high blood pressure; standard error of proportions and population estimates.

Table 5. Prevalence rates of definite hypertension among white and Negro persons 18-74 years by age and sex, with standard errors and proportion with this condition not previously diagnosed: United States, 1971-74

Condition and age	White						Negro					
	Both sexes		Men		Women		Both sexes		Men		Women	
	Rate per 100 population	Standard error of rate	Rate per 100 population	Standard error of rate	Rate per 100 population	Standard error of rate	Rate per 100 population	Standard error of rate	Rate per 100 population	Standard error of rate	Rate per 100 population	Standard error of rate
DEFINITE HYPERTENSION, TOTAL[1]	17.0	0.57	18.5	0.84	15.7	0.72	28.2	1.75	27.8	2.33	28.6	2.28
18-24 years	3.1	0.65	4.9	1.29	1.4	0.30	3.7	1.06	4.6	1.77	2.9	1.06
25-34 years	5.8	0.65	8.2	1.28	3.7	0.57	13.7	2.86	17.7	5.98	10.2	1.95
35-44 years	13.6	1.09	17.3	1.97	10.1	0.94	32.0	3.85	38.2	6.55	28.3	4.71
45-54 years	22.2	1.59	25.8	2.06	18.9	1.86	44.0	6.31	36.8	7.95	50.9	7.69
55-64 years	31.4	1.59	31.1	2.14	31.7	2.02	52.6	5.24	49.9	7.86	54.5	7.11
65-74 years	39.3	1.72	35.3	1.85	42.3	2.26	55.1	3.87	50.1	4.28	58.8	4.73
DEFINITE HYPERTENSION NOT PREVIOUSLY DIAGNOSED, TOTAL[2]	56.6	1.51	64.5	2.00	48.2	1.86	47.2	3.87	54.9	5.13	41.2	4.66
18-24 years	66.9	10.86	67.0	13.68	66.4	12.00	78.1	8.91	90.4	16.94	62.6	18.33
25-34 years	69.1	6.02	71.1	8.84	65.0	6.67	54.0	11.52	52.0	18.35	57.0	12.55
35-44 years	63.3	4.02	66.8	6.48	57.5	4.57	39.6	4.94	38.2	8.82	40.8	6.79
45-54 years	61.9	3.22	64.3	3.74	58.9	4.71	55.6	8.45	71.8	10.26	44.3	10.03
55-64 years	50.4	3.18	62.1	4.34	39.9	4.71	39.2	7.35	48.9	12.99	33.0	8.36
65-74 years	49.2	1.95	61.9	2.32	41.2	2.56	43.7	4.67	51.0	4.70	39.1	5.58

[1]Systolic blood pressure of at least 160 mm. Hg or diastolic blood pressure of at least 95 mm. Hg.
[2]Proportion of persons with definite hypertension, as defined in footnote 1, who have never been told by their doctors that they had high blood pressure; standard error of proportions and population estimates.

NOTE: There are an estimated 19.4 million white persons at ages 18-74 years out of 113.6 million and 3.7 million Negro persons at ages 18-74 years out of 13.0 million that have definite hypertension as defined in footnote 1.

Table 6. Responses to selected medical history items by hypertensive status for persons 18-74 years; population in thousands and percent: United States, 1971-74

Medical history items	Definite hypertension		Borderline hypertension		Normotension		At least 105 mm. Hg diastolic	
	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent	Population in thousands	Percent
Total 18-74 years	23,171	100.0	23,413	100.0	81,353	100.0	6,172	100.0
Has a Doctor Ever Told You That You Have High Blood Pressure?								
Yes, still have it	7,701	33.2	3,421	14.6	2,997	3.7	2,731	44.2
Yes, not now	1,846	8.0	1,598	6.8	2,371	2.9	444	7.2
Yes, don't know now	904	3.9	562	2.4	596	0.7	277	4.5
No	12,712	54.9	17,810	76.1	75,282	92.5	2,716	44.0
Unknown	7	0.0	21	0.1	107	0.1	4	0.1
If Yes, How Many Years Ago Did You First Have It?								
Less than 1 year	177	0.8	65	0.3	54	0.1	97	1.6
1-5 years	5,343	23.0	3,241	13.8	3,616	4.4	1,550	25.1
6-70 years	4,874	21.0	2,241	9.6	2,259	2.8	1,793	29.0
Not applicable, unknown	12,777	55.1	17,866	76.3	75,424	92.7	2,732	44.3
During the Past 6 Months, Have You Ever Used Any Medicine, Pills, or Drugs for High Blood Pressure?								
Regularly	4,893	21.1	2,084	8.9	1,670	2.0	1,471	23.8
Occasionally	831	3.6	309	1.3	233	0.3	307	5.0
No	17,421	75.2	20,992	89.7	79,338	97.5	4,390	71.1
Unknown	27	0.1	28	0.1	112	0.1	4	0.1

Prevalence estimates of hypertension in the civilian noninstitutionalized population 17 years of age and over in 1974, based on household interview findings from a special supplement used in the Health Interview Survey, will be reported in *Advance Data* (HRA) 77-1250, No. 2.

SYMBOLS

Data not available	. . .
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 2 November 8, 1976 | Public Health Service • Health Resources Administration

HYPERTENSION: UNITED STATES, 1974[a]

During 1974 the Division of Health Interview Statistics obtained hypertension prevalence estimates for the U.S. civilian noninstitutionalized population 17 years of age and over. While hypertension data have been collected by this Division in the past, this was the first year for earmarking this condition as a supplemental topic, enabling the collection of more detailed information than had been obtained previously.

Special interest in this disease was generated in 1972 with the establishment of the National High Blood Pressure Education Program. The long-range goal of this program is to lower the morbidity and mortality associated with high blood pressure existing in this country today through improved detection and treatment of this disease. A more immediate program objective, however, is the education of both the public and the medical community about high blood pressure.

This report contains population estimates for four hypertension status categories, "ever had hypertension," "now have hypertension," "no longer have hypertension," and "never had hypertension," by seven demographic characteristics—age, sex, race, family income, education of individual, and geographic region and place of residence. Data on a limited number of supplemental items are also included. A more detailed report containing further analysis of these and other related data is being prepared.

The following criteria were used to classify persons into four hypertension status categories which were developed for the purpose of presenting the hypertension data obtained by the Division of Health Interview Statistics.

Persons comprising the category "ever had hypertension" reported that they were told by a medical doctor that they had either hypertension or high blood pressure. These persons are also classified according to their current hypertension status: (1) persons who "now have hypertension" reported that they still had hypertension (high blood pressure) at the time of the interview, that it was under control, or that they were taking medicine prescribed by a doctor for it; (2) persons who "no longer have hypertension" reported that this condition was cured and

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[a]This report prepared by Abigail Moss and Geraldine Scott, Division of Health Interview Statistics.

Advance Data from Vital and Health Statistics replaces the supplements to the *Monthly Vital Statistics Report* as the means for early release of selected findings from the health and demographic surveys conducted by the NCHS. Most of these releases will be followed by detailed reports in the *Vital and Health Statistics* series.

Provisional vital statistics as well as advance reports of final data for a year will continue to be published in the *Monthly Vital Statistics Report.*

Advance Data is being distributed on the mailing keys for the *Vital and Health Statistics* series, and people who now receive reports from a particular series will also receive all *Advance Data* releases for that series. Temporarily, the mailing list for the *Monthly Vital Statistics Report (MVSR)* is also being used. *MVSR* readers who wish to continue to receive *Advance Data* issues, as well as other persons who wish to receive all issues, should contact:

National Center for Health Statistics
Room 8-20
5600 Fishers Lane
Rockville, Maryland 20852
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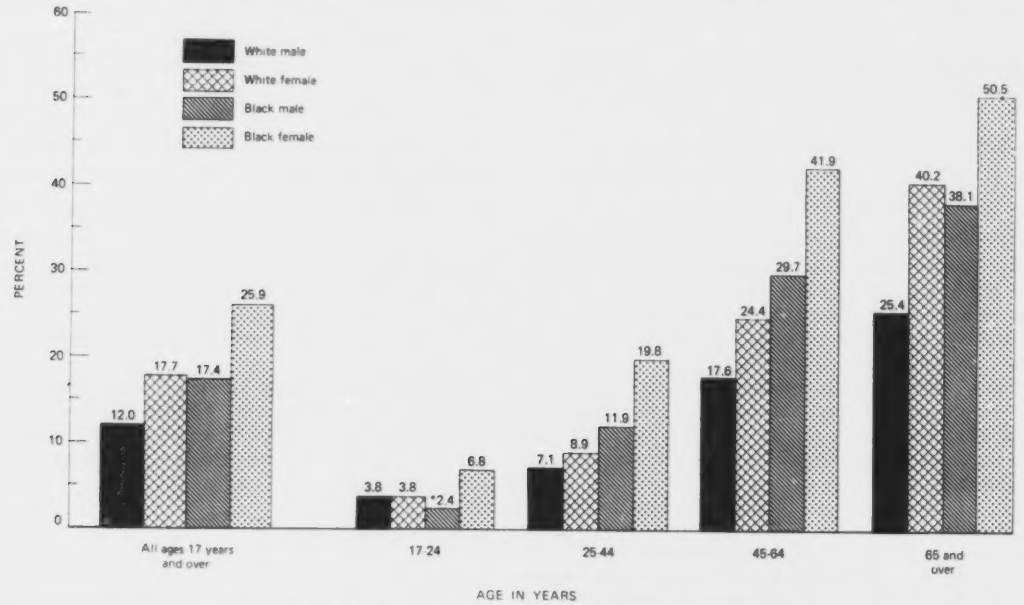
that they were not presently taking medicine prescribed by a doctor for it. Note that to be classified to either category "now have hypertension" or "no longer have hypertension" a person also had to have been told at some time by a medical doctor that he had high blood pressure or hypertension. The category "never had hypertension" comprises persons who were never told by a medical doctor that they had hypertension or high blood pressure.

According to data obtained in 1974 by the Division of Health Interview Statistics, one in five persons comprising the civilian noninstitutionalized population of the United States 17 years of age and over (20.6 percent) has been told by a doctor that he has hypertension, and an estimated 22.6 million Americans at these ages (15.7 percent) still have this condition (table 1). There are marked differences in the percents of persons that now have hypertension for specific sex, age, and race groups.

Proportionately more women (18.5 percent) than men (12.5 percent) currently have hypertension. This sex difference was apparent among every age group shown in table 1 except those aged 17-24 years, where the percents of young hypertensive men and women were about the same. The likelihood of having this condition also increased with advancing age. Whereas about 4 percent of all persons aged 17-24 years now have hypertension, this proportion rose to 35 percent of all persons 65 years of age and over.

Proportionately more black persons (22.2 percent) than white (15.0 percent) currently have hypertension. This pattern was evident for each age group except those aged 17-24 years; differences between white persons and black of these ages were within sampling variation. Among all persons 17 years of age and over, white males had the lowest proportion (12.0 percent) of hypertensives, and black females had the highest proportion (25.9 percent) of hypertensives, as shown in the chart, while similar proportions with hypertension were found for white females (17.7 percent) and black males (17.4 percent). Percent differences between white females and black males with hypertension for the age groups 25-44, 45-64, and 65 years and over may be due to sampling variability.

PERCENT OF PRESENTLY HYPERTENSIVE PERSONS BY AGE, RACE, AND SEX: UNITED STATES, 1974



When hypertension data are displayed by family income, education of the individual, and geographic region and place of residence the following patterns are found. As family income rose, the percent of persons with hypertension declined—from 25.7 percent of those with incomes of less than $5,000 to 11.8 percent when income reached $10,000 or more (table 2). A disproportionate number of older persons and black persons in the lower income bracket, however, account for some of this difference. For example, when these data were age-adjusted to the age distribution of the United States population 17 years and over (see Technical Notes), the percent changed as follows:

	Percent	
	Unadjusted	*Age-adjusted*
Less than $5,000 . . .	25.7	22.0
$5,000-$9,999	17.2	17.1
$10,000 or more . . .	11.8	13.3

Likewise, as level of education increased the percent of persons with hypertension decreased. An estimated 22 percent of all persons who were not high school graduates now have hypertension compared with about 13 percent of high school graduates and about 10 percent of persons completing 1 year or more of college.

The South had the highest proportion of persons with hypertension (16.9 percent) of any geographic region in the country. A slightly greater percent of persons residing outside of standard metropolitan statistical areas (SMSA's) (16.9 percent) currently had hypertension than did those living within SMSA's (15.1 percent). Within SMSA's, the proportion of hypertensives was more than 20 percent higher among people living in the central city (16.8 percent) than those living in adjacent areas (13.8 percent).

Most health practitioners agree that all persons should have a blood pressure test periodically. Based on 1974 Health Interview Survey findings, almost two-thirds of all persons aged 17 years and over were given a test of this kind within the 12-month period preceding the interview (table 3).

The percent of persons with a 12-month blood pressure test gradually increased with each older age group, from 62.6 percent of those 17-44 years to 70.4 percent of persons 65 years and over. Proportionately more females (71.8 percent) than males (56.5 percent) had a test within the year, while about the same proportion of white persons and black were given a blood pressure test during this period. An estimated 1.4 million people 17 years of age or older (about 1 percent of the U.S. civilian noninstitutionalized adult population) reported they had never had a blood pressure test.

The percents of persons having a blood pressure test during the previous year were somewhat higher for the currently hypertensive population than for the general population. About 86 percent of the currently hypertensive population had their blood pressure taken within 12 months of the date of interview, and three out of every four persons with high blood pressure had a test as recently as within 6 months of the interview.

Proportionately more females than males now with hypertension had a blood pressure test within the past 6 months (76.3 compared with 70.4 percent) and within the past 12 months (87.8 compared with 83.5 percent). The proportion of currently hypertensive persons with a blood pressure test during the 6-month period also rose with each older age group, from 66.9 percent of those aged 17-44 years to 78.6 percent of those aged 65 years and over. However for the 12-month period preceding the interview, although proportionately more persons 45 years and over had a blood pressure test than did younger persons, the percents with a test during this period for the two age groups 45-64 and 65 years and over were about the same.

Of persons with a blood pressure test within the year, the proportion having multiple tests during this period rose as age increased—from 58.2 percent of persons 17-44 years to 73.6 percent of those 65 years or older. The percent with two tests or more was higher for females (65.7 percent) than it was for males (56.9 percent), and it was higher for black persons (67.3 percent) than it was for white persons (61.5 percent). Proportionately more persons now having hypertension had multiple blood pressure tests during the year than did the total U.S. civilian noninstitutionalized population (81.4 percent compared with 62.1 percent).

Persons whose blood pressure was taken in the past year are classified according to the last test result (table 4). Of the total United States

civilian noninstitutionalized population 17 years of age and over with blood pressure taken in the past year, a little more than half (53.1 percent) were told their last blood pressure reading was normal. Males had a higher percent of normal readings than did females (57.3 percent compared with 50.2 percent). About the same percent of males and females had a blood pressure reading that was high (7.1 and 7.8 percent, respectively), while females had almost twice as high a percentile of blood pressure results that were low as did males (4.8 compared with 2.6 percent).

By race, proportionately more black persons (10.7 percent) than white (7.1 percent) 17 years and over had a blood pressure reading that was high.

About the same proportion of white persons (4.0 percent) and black (3.2 percent) had a blood pressure reading that was low. Overall, the proportion of persons having a blood pressure reading that was high was much greater among persons now having hypertension (29.7 percent) than among the total United States adult population (7.5 percent).

Data on doctor visits and bed days for hypertension which occurred during the 12-month period preceding the interview are presented in table 5. About three-fourths of the currently hypertensive population saw a doctor for this condition at least once during the year, while 26.9 percent reported five doctor visits or more. The percent of currently hypertensive persons with one doctor visit or more of this kind increased somewhat for two broad age groups—from about 62 percent of persons aged 17-44 years to about 77 percent of all persons aged 45 years and over. Over one-third of all persons comprising the oldest age category had five doctor visits or more for hypertension within this period compared with only about 9 percent of persons 17-24 years of age.

The percent of persons reporting one doctor visit or more for hypertension was higher for presently hypertensive females (76.4 percent) than it was for males (68.7 percent). Differences in the percents of white and black persons now with hypertension having one doctor visit or more during the year, however, were within sampling variation.

Only a small proportion of persons now with hypertension (8.3 percent) had to stay in bed all or most of the day for 1 day or more during the year because of this condition. Furthermore, the number of days spent in bed for this condition in the 12-month period totaled less than 1 week for more than one-half of those persons reporting any bed days because of their high blood pressure.

The percent of currently hypertensive women with bed days for this condition was slightly higher than was the percent of men with bed days (9.6 compared with 6.3 percent). And proportionately more hypertensive black individuals (18.9 percent) reported 1 bed day or more for this condition than did the white population (6.5 percent).

Data on interval since last doctor visit (for any reason) are included in table 6. Highlighted below are some of the differences noted in this table among certain population groups.

Proportionately more persons now with hypertension than persons comprising the general population had a doctor visit within the past 6 months (79.2 compared with 61.4 percent) and within the past 12 months (89.5 compared with 77.1 percent).

Currently hypertensive females were somewhat more likely to have had a recent doctor visit than were hypertensive males; within 6 months, 81.5 percent and 75.3 percent, respectively, and within the year, 91.7 percent and 85.9 percent, respectively.

In general, as age increased, the proportion of currently hypertensive persons that saw a doctor within 6 months and 12 months prior to the interview also rose. Whereas about 74 percent of hypertensive persons aged 17-44 years saw a doctor within 6 months, about 82 percent of those 65 years or older had a visit within this period. Similarly, 87.7 percent of the hypertensive population aged 17-44 visited a doctor during the year compared with 90.7 percent of persons comprising the age group 65 years and over.

No racial differences were found between the proportion of white persons and black with hypertension that saw a doctor either within 6 or 12 months of the date of interview.

Table 1. Number and percent distribution of persons 17 years of age and over by hypertension status, according to race, sex, and age; based on data collected in health interviews: United States, 1974

Race, sex, and age	All persons 17 years and over	Hypertension status					All persons 17 years and over	Hypertension status				
		Total ever with hypertension[1]	Now has hypertension		Never had hypertension	Unknown		Total ever with hypertension[1]	Now has hypertension		Never had hypertension	Unknown
			Yes	No					Yes	No		
	Number in thousands						Percent distribution					
ALL RACES[2]												
Both sexes												
All ages 17 years and over	144,380	29,789	22,626	5,345	105,004	9,587	100.0	20.6	15.7	3.7	72.7	6.6
17-24 years	29,562	2,069	1,147	675	24,966	2,527	100.0	7.0	3.9	2.3	84.5	8.5
25-44 years	51,216	7,235	4,560	2,129	40,590	3,391	100.0	14.1	8.9	4.2	79.3	6.6
45-64 years	42,862	11,960	9,652	1,657	27,977	2,926	100.0	27.9	22.5	3.9	65.3	6.8
65 years and over	20,740	8,525	7,267	884	11,471	744	100.0	41.1	35.0	4.3	55.3	3.6
Male												
All ages 17 years and over	67,947	11,562	8,479	2,156	49,784	6,601	100.0	17.0	12.5	3.2	73.3	9.7
17-24 years	14,252	837	507	205	11,744	1,672	100.0	5.9	3.6	1.4	82.4	11.7
25-44 years	24,698	2,989	1,869	837	19,135	2,574	100.0	12.1	7.6	3.4	77.5	10.4
45-64 years	20,419	4,953	3,829	774	13,468	1,998	100.0	24.3	18.8	3.8	66.0	9.8
65 years and over	8,578	2,784	2,273	339	5,437	357	100.0	32.5	26.5	4.0	63.4	4.2
Female												
All ages 17 years and over	76,433	18,228	14,147	3,189	55,220	2,986	100.0	23.8	18.5	4.2	72.2	3.9
17-24 years	15,310	1,232	640	470	13,223	855	100.0	8.0	4.2	3.1	86.4	5.6
25-44 years	26,518	4,247	2,691	1,291	21,455	816	100.0	16.0	10.1	4.9	80.9	3.1
45-64 years	22,443	7,007	5,823	884	14,509	927	100.0	31.2	25.9	3.9	64.6	4.1
65 years and over	12,163	5,742	4,993	545	6,033	388	100.0	47.2	41.1	4.5	49.6	3.2
WHITE												
Both sexes												
All ages 17 years and over	127,787	25,598	19,143	4,871	93,930	8,259	100.0	20.0	15.0	3.8	73.5	6.5
17-24 years	25,464	1,789	959	611	21,357	2,117	100.0	7.0	3.8	2.4	84.7	8.3
25-44 years	44,934	6,037	3,614	1,936	36,024	2,873	100.0	13.4	8.0	4.3	80.2	6.4
45-64 years	38,514	10,194	8,132	1,501	25,708	2,612	100.0	26.5	21.1	3.9	66.7	6.8
65 years and over	18,875	7,578	6,438	822	10,640	657	100.0	40.1	34.1	4.4	56.4	3.5
Male												
All ages 17 years and over	60,482	10,063	7,244	1,990	44,707	5,712	100.0	16.6	12.0	3.3	73.9	9.4
17-24 years	12,375	761	468	191	10,218	1,397	100.0	6.1	3.8	1.5	82.6	11.3
25-44 years	21,922	2,617	1,564	790	17,092	2,213	100.0	11.9	7.1	3.6	78.0	10.1
45-64 years	18,414	4,252	3,236	688	12,377	1,784	100.0	23.1	17.6	3.7	67.2	9.7
65 years and over	7,771	2,433	1,976	321	5,019	319	100.0	31.3	25.4	4.1	64.6	4.1
Female												
All ages 17 years and over	67,305	15,535	11,898	2,881	49,223	2,547	100.0	23.1	17.7	4.3	73.1	3.8
17-24 years	13,088	1,029	491	420	11,339	721	100.0	7.9	3.8	3.2	86.6	5.5
25-44 years	23,012	3,421	2,050	1,147	18,932	660	100.0	14.9	8.9	5.0	82.3	2.9
45-64 years	20,100	5,941	4,896	813	13,331	828	100.0	29.6	24.4	4.0	66.3	4.1
65 years and over	11,104	5,145	4,461	501	5,621	338	100.0	46.3	40.2	4.5	50.6	3.0
BLACK												
Both sexes												
All ages 17 years and over	14,865	3,943	3,294	439	9,725	1,197	100.0	26.5	22.2	3.0	65.4	8.1
17-24 years	3,725	270	179	*64	3,084	372	100.0	7.2	4.8	*1.7	82.8	10.0
25-44 years	5,415	1,114	887	176	3,847	454	100.0	20.6	16.4	3.3	71.0	8.4
45-64 years	3,982	1,668	1,441	137	2,016	299	100.0	41.9	36.2	3.4	50.6	7.5
65 years and over	1,743	890	787	*62	779	74	100.0	51.1	45.2	*3.6	44.7	4.2
Male												
All ages 17 years and over	6,614	1,377	1,154	148	4,423	814	100.0	20.8	17.4	2.2	66.9	12.3
17-24 years	1,668	76	*40	*14	1,341	251	100.0	4.6	*2.4	*0.8	80.4	15.0
25-44 years	2,343	327	279	*37	1,687	329	100.0	14.0	11.9	*1.6	72.0	14.0
45-64 years	1,853	650	550	79	1,004	199	100.0	35.1	29.7	4.3	54.2	10.7
65 years and over	749	324	285	*19	391	*35	100.0	43.3	38.1	*2.5	52.2	*4.7
Female												
All ages 17 years and over	8,252	2,566	2,140	290	5,302	384	100.0	31.1	25.9	3.5	64.3	4.7
17-24 years	2,057	194	140	*49	1,742	120	100.0	9.4	6.8	*2.4	84.7	5.8
25-44 years	3,072	787	607	139	2,160	125	100.0	25.6	19.8	4.5	70.3	4.1
45-64 years	2,129	1,018	891	*59	1,012	100	100.0	47.8	41.9	*2.8	47.5	4.7
65 years and over	994	567	502	*44	388	*39	100.0	57.0	50.5	*4.4	39.0	*3.9

[1] Includes unknown present hypertension status.

[2] Includes other races.

Table 2. Number and percent distribution of persons 17 years of age and over by hypertension status, according to selected characteristics; based on data collected in health interviews: United States, 1974

Characteristic	All persons 17 years and over	Hypertension status					All persons 17 years and over	Hypertension status				
		Total ever with hypertension[1]	Now has hypertension		Never had hypertension	Unknown		Total ever with hypertension[1]	Now has hypertension		Never had hypertension	Unknown
			Yes	No					Yes	No		
	Number in thousands						Percent distribution					
All persons 17 years and over[2]	144,380	29,789	22,626	5,345	105,004	9,587	100.0	20.6	15.7	3.7	72.7	6.6
FAMILY INCOME												
Less than $5,000	24,753	7,665	6,350	913	16,140	948	100.0	31.0	25.7	3.7	65.2	3.8
$5,000-$9,999	32,881	7,228	5,655	1,219	23,945	1,708	100.0	22.0	17.2	3.7	72.8	5.2
$10,000-$14,999	33,881	5,542	3,923	1,174	26,084	2,255	100.0	16.4	11.6	3.5	77.0	6.7
$15,000 or more	43,629	7,442	5,214	1,759	32,926	3,261	100.0	17.1	12.0	4.0	75.5	7.5
EDUCATION OF INDIVIDUAL												
Less than 9 years	27,132	8,871	7,402	993	17,015	1,246	100.0	32.7	27.3	3.7	62.7	4.6
9-11 years	27,184	5,815	4,443	965	19,435	1,435	100.0	21.4	16.3	3.5	71.5	7.1
12 years	50,548	8,979	6,632	1,888	38,341	3,228	100.0	17.8	13.1	3.7	75.9	6.4
13 years or more	37,512	5,791	3,866	1,470	29,083	2,638	100.0	15.4	10.3	3.9	77.5	7.0
GEOGRAPHIC REGION												
Northeast	34,5	7,228	5,469	1,321	25,110	2,646	100.0	20.7	15.6	3.8	71.8	7.6
North Central	38,0	7,737	5,749	1,489	28,081	2,612	100.0	20.1	15.0	3.9	73.1	6.8
South	45,1	9,824	7,646	1,556	32,448	2,848	100.0	21.8	16.9	3.4	71.9	6.3
West	25,845	5,000	3,761	980	19,364	1,480	100.0	19.3	14.6	3.8	74.9	5.7
PLACE OF RESIDENCE												
SMSA	99,807	19,966	15,092	3,566	72,956	6,885	100.0	20.0	15.1	3.6	73.1	6.9
Central city	44,504	9,541	7,471	1,469	32,001	2,962	100.0	21.4	16.8	3.3	71.9	6.7
Outside central city	55,304	10,425	7,621	2,097	40,955	3,923	100.0	18.9	13.8	3.8	74.1	7.1
Outside SMSA	44,573	9,824	7,534	1,779	32,048	2,702	100.0	22.0	16.9	4.0	71.9	6.1
Nonfarm	39,370	8,729	6,671	1,597	28,182	2,460	100.0	22.2	16.9	4.1	71.6	6.2
Farm	5,203	1,095	863	181	3,866	242	100.0	21.0	16.6	3.5	74.3	4.7

[1] Includes unknown present hypertension status.
[2] Includes unknown income and education.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision (more than 30 percent relative standard error)	*

Table 3. Number of persons 17 years of age and over and percent distribution by interval since last blood pressure test, and number of persons with blood pressure taken during year and percent distribution by times blood pressure taken, according to hypertension status, age, sex, and race; based on data collected in health interviews: United States, 1974

Hypertension status, age sex, and race	All persons 17 years and over in thousands	Interval since last blood pressure test					Persons with blood pressure taken in past year in thousands	Times blood pressure taken in past year				
		Total[1]	Less than 6 months	6-11 months	1 year	2 years or more		Total[2]	1 time	2-4 times	5-9 times	10 times or more
		Percent distribution						Percent distribution				
ALL STATUSES[3]												
All persons 17 years and over[4]	144,380	100.0	47.1	17.6	11.8	15.8	133,599	100.0	33.9	39.0	11.7	11.4
Age:												
17-44 years	80,778	100.0	43.4	19.2	12.9	15.5	73,795	100.0	38.1	39.6	9.8	8.8
45-64 years	42,862	100.0	48.6	17.1	11.1	15.8	39,859	100.0	32.7	38.4	12.4	12.3
65 years and over	20,740	100.0	58.4	12.1	8.8	16.5	19,945	100.0	21.5	38.1	16.6	18.8
Sex:												
Male	67,947	100.0	39.8	16.7	12.5	19.9	60,729	100.0	38.8	39.8	8.7	8.4
Female	76,433	100.0	53.6	18.3	11.1	12.1	72,870	100.0	30.4	38.4	13.7	13.5
Race:												
White	127,787	100.0	46.7	17.8	11.9	16.1	118,625	100.0	34.5	39.0	11.5	11.0
Male	60,482	100.0	39.8	16.8	12.7	20.1	54,300	100.0	38.6	40.1	8.7	8.1
Female	67,305	100.0	52.8	18.7	11.3	12.4	64,324	100.0	31.5	38.3	13.5	13.1
Black	14,865	100.0	51.2	15.3	10.7	12.4	13,418	100.0	28.4	38.9	13.6	14.9
Male	6,614	100.0	40.3	16.1	12.3	16.0	5,671	100.0	39.3	38.3	9.5	10.1
Female	8,252	100.0	60.0	14.6	9.4	9.5	7,747	100.0	21.8	39.2	16.1	17.8
EVER HAD HYPERTENSION[5]												
All persons 17 years and over[4]	29,789	100.0	68.3	14.3	7.7	8.2	29,401	100.0	19.0	38.0	18.9	20.3
Age:												
17-44 years	9,304	100.0	60.9	17.7	10.7	9.4	9,182	100.0	25.7	39.4	15.2	16.1
45-64 years	11,960	100.0	69.6	14.5	6.9	7.4	11,787	100.0	18.0	37.7	20.0	20.4
65 years and over	8,525	100.0	74.6	10.3	5.7	8.1	8,432	100.0	13.8	36.9	21.1	24.3
Sex:												
Male	11,562	100.0	63.8	15.5	9.2	10.5	11,462	100.0	22.1	40.4	15.5	17.9
Female	18,228	100.0	71.1	13.6	6.8	6.8	17,939	100.0	17.2	36.6	20.9	21.7
Race:												
White	25,598	100.0	68.3	14.6	7.8	7.9	25,286	100.0	19.6	38.0	19.1	19.5
Male	10,063	100.0	63.9	15.6	9.3	10.3	9,987	100.0	22.1	40.6	15.7	17.4
Female	15,535	100.0	71.2	14.0	6.8	6.4	15,299	100.0	18.1	36.5	21.1	20.8
Black	3,943	100.0	68.4	11.5	7.8	10.4	3,875	100.0	15.2	37.8	18.0	25.1
Male	1,377	100.0	63.3	13.9	9.7	12.2	1,362	100.0	22.2	40.0	13.9	21.5
Female	2,566	100.0	71.1	10.2	6.9	9.5	2,513	100.0	11.6	36.7	20.1	27.0
NOW HAVE HYPERTENSION												
All persons 17 years and over[4]	22,626	100.0	74.1	12.1	6.5	6.1	22,352	100.0	15.0	38.3	20.7	22.4
Age:												
17-44 years	5,708	100.0	66.9	14.3	9.0	8.5	5,636	100.0	20.2	40.6	16.9	18.9
45-64 years	9,652	100.0	74.9	12.3	6.2	5.1	9,513	100.0	14.0	38.0	22.0	22.4
65 years and over	7,267	100.0	78.6	10.0	4.9	5.5	7,203	100.0	12.5	37.0	21.8	25.0
Sex:												
Male	8,479	100.0	70.4	13.0	7.9	7.7	8,401	100.0	16.7	41.0	17.5	20.8
Female	14,147	100.0	76.3	11.5	5.7	5.1	13,951	100.0	14.0	36.7	22.6	23.4
Race:												
White	19,143	100.0	74.3	12.3	6.5	5.6	18,912	100.0	15.3	38.3	21.0	21.7
Male	7,244	100.0	70.4	13.1	8.1	7.3	7,174	100.0	16.6	41.0	17.7	20.2
Female	11,898	100.0	76.7	11.8	5.5	4.6	11,738	100.0	14.5	36.8	23.0	22.5
Black	3,294	100.0	72.8	10.6	6.7	8.6	3,250	100.0	13.1	37.9	18.9	26.7
Male	1,154	100.0	70.0	12.6	6.6	10.1	1,146	100.0	17.7	42.2	15.5	23.2
Female	2,140	100.0	74.3	9.5	6.7	7.8	2,104	100.0	10.6	35.6	20.7	28.6
NEVER HAD HYPERTENSION												
All persons 17 years and over[4]	105,004	100.0	44.5	19.8	13.8	19.0	102,458	100.0	39.3	39.4	9.1	8.2
Age:												
17-44 years	65,556	100.0	44.2	20.9	14.2	17.5	63,713	100.0	40.2	39.7	8.9	7.6
45-64 years	27,977	100.0	43.7	19.7	13.8	20.6	27,519	100.0	41.2	38.8	8.1	7.8
65 years and over	11,471	100.0	48.4	14.0	11.5	23.4	11,226	100.0	29.4	39.7	12.2	13.3
Sex:												
Male	49,784	100.0	38.8	19.0	14.8	24.3	48,496	100.0	44.1	39.6	6.6	5.4
Female	55,220	100.0	49.7	20.5	12.9	14.2	53,962	100.0	35.8	39.3	10.9	10.2
Race:												
White	93,930	100.0	44.0	20.0	14.0	19.4	91,844	100.0	39.8	39.4	8.8	8.0
Male	44,707	100.0	38.8	19.0	14.9	24.6	43,668	100.0	43.7	40.0	6.5	5.3
Female	49,223	100.0	48.8	20.9	13.1	14.7	48,175	100.0	36.8	39.0	10.5	10.0
Black	9,723	100.0	49.6	18.3	12.7	14.2	9,315	100.0	34.7	39.5	11.5	10.2
Male	4,423	100.0	39.5	19.2	15.4	19.4	4,199	100.0	46.4	37.3	8.0	5.7
Female	5,302	100.0	58.1	17.6	10.5	10.0	5,116	100.0	27.1	41.0	13.7	13.1

[1] Includes never and unknown intervals.
[2] Includes unknown times.
[3] Includes unknown hypertension status.
[4] Includes persons of other races.
[5] Includes now have hypertension, no longer have hypertension, and unknown if now have hypertension.

Table 4. Number of persons 17 years of age and over with blood pressure taken in past year and percent distribution by last test results, according to hypertension status, sex, and race; based on data collected in health interviews: United States, 1974

Hypertension status, sex, and race	Persons with blood pressure taken in past year in thousands	Told blood pressure was—					Not told
		Total[1]	Normal	High	Low	Other	
		Percent distribution					
ALL STATUSES[2]							
All persons 17 years and over[3]	93,342	100.0	53.1	7.5	3.9	3.2	30.9
Sex:							
Male	38,425	100.0	57.3	7.1	2.6	3.3	28.3
Female	54,917	100.0	50.2	7.8	4.8	3.2	32.8
Race:							
White	82,423	100.0	53.1	7.1	4.0	3.4	31.1
Male	34,265	100.0	57.4	6.9	2.8	3.4	28.1
Female	48,157	100.0	50.0	7.3	4.9	3.4	33.2
Black	9,892	100.0	53.5	10.7	3.2	2.0	29.3
Male	3,731	100.0	56.7	9.7	*1.1	2.3	29.4
Female	6,161	100.0	51.6	11.2	4.5	1.8	29.2
EVER HAD HYPERTENSION[4]							
All persons 17 years and over[3]	24,606	100.0	45.5	25.3	1.3	6.1	20.4
Sex:							
Male	9,167	100.0	48.6	25.4	1.4	6.2	16.9
Female	15,439	100.0	43.7	25.3	1.3	6.0	22.5
Race:							
White	21,235	100.0	45.9	24.6	1.4	6.4	20.3
Male	7,998	100.0	48.7	24.8	1.6	6.4	16.6
Female	13,237	100.0	44.1	24.4	1.3	6.5	22.6
Black	3,150	100.0	43.0	30.9	*0.5	3.3	21.1
Male	1,062	100.0	45.9	30.7	-	*4.1	19.3
Female	2,088	100.0	41.6	30.9	*0.6	*2.8	22.0
NOW HAVE HYPERTENSION							
All persons 17 years and over[3]	19,499	100.0	40.9	29.7	1.2	6.8	19.8
Sex:							
Male	7,078	100.0	44.1	29.9	1.6	6.9	15.9
Female	12,421	100.0	39.2	29.6	1.0	6.8	22.0
Race:							
White	16,582	100.0	41.0	28.9	1.3	7.4	19.8
Male	6,049	100.0	43.7	29.4	1.9	7.4	15.6
Female	10,532	100.0	39.5	28.7	0.9	7.3	22.2
Black	2,746	100.0	40.7	34.3	*0.6	3.5	19.5
Male	953	100.0	45.8	32.9	-	*3.8	17.5
Female	1,793	100.0	38.0	35.1	*0.9	*3.3	20.6
NEVER HAD HYPERTENSION							
All persons 17 years and over[3]	67,538	100.0	55.9	1.0	4.9	2.2	34.7
Sex:							
Male	28,753	100.0	60.2	1.2	3.1	2.4	32.0
Female	38,785	100.0	52.8	.8	6.3	2.1	36.8
Race:							
White	60,129	100.0	55.7	1.0	5.0	2.3	34.9
Male	25,841	100.0	60.1	1.3	3.2	2.5	31.7
Female	34,288	100.0	52.3	.8	6.3	2.2	37.3
Black	6,609	100.0	58.7	1.0	4.6	1.3	33.1
Male	2,597	100.0	61.4	*1.1	*1.6	*1.4	33.8
Female	4,012	100.0	57.0	*1.0	6.6	*1.2	32.7

[1] Includes unknown status of blood pressure reading.
[2] Includes unknown hypertension status.
[3] Includes persons of other races.
[4] Includes now have hypertension, no longer have hypertension, and unknown if now have hypertension.

Table 5. Number of hypertensive persons 17 years of age and over and percent distribution by number of doctor visits and bed days for hypertension in past year, according to hypertension status, age, sex, and race; based on data collected in health interviews: United States, 1974

Hypertension status, age, sex, and race	All persons 17 years and over in thousands	Number of doctor visits for hypertension in past year					Number of bed days for hypertension in past year			
		Total[1]	None	1	2-4	5 or more	Total[2]	None	Less than 1 week	1 week or more
EVER HAD HYPERTENSION[3]		Percent distribution					Percent distribution			
All persons 17 years and over[4]	29,789	100.0	34.9	16.6	25.1	21.9	100.0	92.8	3.8	2.9
Age:										
17-24 years	2,069	100.0	48.4	22.9	18.7	7.3	100.0	92.2	*4.2	*2.2
25-44 years	7,235	100.0	48.8	19.2	18.2	12.7	100.0	93.8	3.7	1.8
45-64 years	11,960	100.0	30.7	16.2	28.0	23.8	100.0	91.9	4.3	3.5
65 years and over	8,525	100.0	25.8	13.3	28.6	30.5	100.0	93.4	3.0	2.9
Sex:										
Male	11,562	100.0	40.2	16.0	24.4	18.0	100.0	94.6	2.6	2.4
Female	18,228	100.0	31.6	17.0	25.6	24.4	100.0	91.7	4.6	3.2
Race:										
White	25,598	100.0	35.2	16.8	25.3	21.4	100.0	94.3	3.0	2.2
Male	10,063	100.0	40.6	16.2	24.3	17.6	100.0	95.7	2.1	1.8
Female	15,535	100.0	31.7	17.2	25.8	23.9	100.0	93.3	3.7	2.4
Black	3,943	100.0	33.4	15.6	23.7	25.2	100.0	83.3	8.7	7.4
Male	1,377	100.0	38.9	14.6	23.5	20.0	100.0	86.1	*6.6	*6.7
Female	2,566	100.0	30.4	16.2	23.7	28.0	100.0	81.9	9.7	7.8
NOW HAVE HYPERTENSION										
All persons 17 years and over[4]	22,626	100.0	25.2	16.8	29.8	26.9	100.0	91.5	4.7	3.6
Age:										
17-24 years	1,147	100.0	39.2	27.4	24.3	8.7	100.0	90.7	*5.8	*3.1
25-44 years	4,560	100.0	36.5	21.4	23.4	17.3	100.0	91.5	5.6	2.8
45-64 years	9,652	100.0	22.3	15.8	32.5	28.2	100.0	90.5	5.1	4.3
65 years and over	7,267	100.0	19.7	13.6	31.1	34.1	100.0	93.1	3.4	3.3
Sex:										
Male	8,479	100.0	30.1	15.3	29.8	23.0	100.0	93.6	3.2	3.1
Female	14,147	100.0	22.3	17.3	29.9	29.3	100.0	90.2	5.6	3.9
Race:										
White	19,143	100.0	24.9	17.0	30.3	26.7	100.0	93.3	3.8	2.8
Male	7,244	100.0	30.1	16.1	30.2	22.7	100.0	95.1	2.5	2.3
Female	11,898	100.0	21.8	17.5	30.4	29.1	100.0	92.3	4.8	3.0
Black	3,294	100.0	26.7	16.0	26.9	28.3	100.0	80.8	10.0	8.8
Male	1,154	100.0	30.7	15.2	27.5	23.8	100.0	84.1	*7.9	*8.0
Female	2,140	100.0	24.5	16.4	26.5	30.7	100.0	79.1	11.1	9.3

[1]Includes unknown doctor visits.
[2]Includes unknown bed days.
[3]Includes now have hypertension, no longer have hypertension, and unknown if now have hypertension.
[4]Includes persons of other races.

Table 6. Number of persons 17 years of age and over and percent distribution by interval since last doctor visit, according to hypertension status, age, sex, and race; based on data collected in health interviews: United States, 1974

Hypertension status, age, sex, and race	All persons 17 years and over in thousands	Interval since last doctor visit					
		Total[1]	In past 2 weeks	2 weeks to less than 6 months	6 months to less than 1 year	1 year	2-4 years	5 years or more
		Percent distribution						
ALL STATUSES[2]								
All persons 17 years and over[3]	144,380	100.0	15.7	45.7	15.8	8.8	9.4	4.2
Age:								
17-44 years	80,778	100.0	14.2	46.0	17.7	9.7	9.0	2.9
45-64 years	42,862	100.0	16.3	44.1	14.9	8.3	10.5	5.6
65 years and over	20,740	100.0	20.2	47.9	9.9	6.7	8.5	6.5
Sex:								
Male	67,947	100.0	12.6	41.2	16.7	10.7	12.8	5.5
Female	76,433	100.0	18.4	49.7	14.9	7.2	6.4	3.1
Race:								
White	127,787	100.0	15.6	45.7	15.9	8.8	9.4	4.2
Male	60,482	100.0	12.6	41.3	16.9	10.6	12.7	5.4
Female	67,305	100.0	18.4	49.7	14.9	7.2	6.4	3.1
Black	14,865	100.0	16.8	45.8	14.6	8.8	8.7	4.6
Male	6,614	100.0	12.7	40.7	15.6	10.9	12.7	6.1
Female	8,252	100.0	20.1	49.8	13.7	7.2	5.5	3.3
EVER HAD HYPERTENSION[4]								
All ages 17 years and over[3]	29,789	100.0	23.0	52.1	12.4	5.8	4.7	1.9
Age:								
17-44 years	9,304	100.0	20.8	49.5	16.1	6.9	4.9	1.8
45-64 years	11,960	100.0	22.9	53.0	11.8	5.4	4.8	2.0
65 years and over	8,525	100.0	25.7	53.6	9.1	5.3	4.4	1.8
Sex:								
Male	11,562	100.0	20.7	49.5	13.0	7.9	6.3	2.3
Female	18,228	100.0	24.6	53.7	12.0	4.5	3.5	1.6
Race:								
White	25,598	100.0	22.8	52.2	12.6	5.7	4.9	1.7
Male	10,063	100.0	20.4	49.4	13.5	7.8	6.5	2.3
Female	15,535	100.0	24.4	54.0	12.1	4.3	3.8	1.4
Black	3,943	100.0	24.7	50.7	10.8	6.9	3.8	2.7
Male	1,377	100.0	21.9	50.5	9.1	8.8	7.3	*2.0
Female	2,566	100.0	26.2	50.9	11.7	5.8	*1.9	3.0
NOW HAVE HYPERTENSION								
All persons 17 years and over[3]	22,626	100.0	25.1	54.1	10.4	5.2	3.8	1.4
Age:								
17-44 years	5,708	100.0	23.7	50.3	13.8	6.2	4.6	1.3
45-64 years	9,652	100.0	24.5	55.4	9.8	5.2	3.6	1.4
65 years and over	7,267	100.0	27.0	55.2	8.4	4.5	3.3	1.5
Sex:								
Male	8,479	100.0	22.4	52.9	10.6	7.2	5.3	1.7
Female	14,147	100.0	26.7	54.8	10.2	4.1	2.9	1.2
Race:								
White	19,143	100.0	24.8	54.5	10.4	5.1	3.8	1.4
Male	7,244	100.0	22.1	52.9	11.0	7.3	5.1	1.7
Female	11,898	100.0	26.4	55.5	10.1	3.7	3.0	1.2
Black	3,294	100.0	26.9	51.6	10.1	5.9	3.6	*1.7
Male	1,154	100.0	22.9	54.7	8.1	6.5	6.3	*1.6
Female	2,140	100.0	29.1	50.0	11.1	5.7	*2.1	*1.7
NEVER HAD HYPERTENSION								
All persons 17 years and over[3]	105,004	100.0	13.8	44.4	16.8	9.4	10.5	4.8
Age:								
17-44 years	65,556	100.0	13.5	46.0	18.1	9.6	9.3	3.0
45-64 years	27,577	100.0	13.6	41.0	16.3	9.5	12.6	6.8
65 years and over	11,471	100.0	16.1	43.8	10.5	7.7	11.8	9.9
Sex:								
Male	49,784	100.0	10.9	39.7	17.8	11.0	14.1	6.1
Female	55,220	100.0	16.4	48.7	15.9	8.0	7.2	3.6
Race:								
White	93,930	100.0	13.8	44.4	16.9	9.4	10.4	4.8
Male	44,707	100.0	11.1	39.8	17.9	10.9	14.0	6.1
Female	49,223	100.0	16.4	48.6	16.0	8.0	7.1	3.6
Black	9,725	100.0	14.0	44.4	16.3	9.0	10.5	5.1
Male	4,423	100.0	9.7	38.7	18.0	10.8	14.7	7.1
Female	5,302	100.0	17.6	49.2	14.9	7.6	7.0	3.5

[1]Includes never and unknown doctor visits.
[2]Includes unknown hypertension status.
[3]Includes persons of other races.
[4]Includes now have hypertension, no longer have hypertension, and unknown if now have hypertension.

TECHNICAL NOTES

SOURCE OF DATA. The data presented in this report were obtained from household interviews in the Health Interview Survey. These interviews were conducted throughout 1974 in a probability sample of the civilian noninstitutionalized population of the United States. During that year approximately 116,000 persons living in about 40,000 households were included in the sample. The hypertension questions were asked of each household member 17 years of age and over who was identified as a "sample person." This subsample included approximately 26,000 persons.

SAMPLING. The sampling pattern for sample person selection was based on the total number of related and unrelated household members. Sample persons (approximately a one-third subsample of the actual Health Interview Survey sample) were selected by the interviewer at the time of interview. To determine which household member(s) to designate as a sample person, the interviewer referred to a preselected flashcard after listing all related and unrelated persons in the household on the questionnaire. The flashcard contained, for each household size, one or more person numbers that were to be identified as the sample person(s).

Since the estimates shown are based on a sample of the population rather than on the entire population, they are subject to sampling error. Standard errors appropriate for the estimates of the number of persons are shown in table I; standard errors appropriate for percentages are shown in table II.

Table I. Standard errors of estimates of aggregates

Size of estimate in thousands	Standard error in thousands
70	20
100	24
300	42
500	54
700	64
1,000	77
5,000	170
10,000	238
20,000	329
30,000	394
50,000	485
100,000	593

Table II. Standard errors, expressed in percentage points, of estimated percentages

Base of percentage in thousands	Estimated percentage				
	2 or 98	5 or 95	10 or 90	20 or 80	50
70	4.1	6.3	8.7	11.6	14.5
100	3.4	5.3	7.3	9.7	12.1
300	2.0	3.1	4.2	5.6	7.0
500	1.5	2.4	3.3	4.3	5.4
700	1.3	2.0	2.8	3.7	4.6
1,000	1.1	1.7	2.3	3.1	3.8
5,000	0.5	0.7	1.0	1.4	1.7
10,000	0.3	0.5	0.7	1.0	1.2
20,000	0.2	0.4	0.5	0.7	0.9
30,000	0.2	0.3	0.4	0.6	0.7
50,000	0.2	0.2	0.3	0.4	0.5
100,000	0.1	0.2	0.2	0.3	0.4

LIMITATIONS AND QUALIFICATIONS OF DATA. When the 1974 Health Interview Survey hypertension prevalence estimates for the U.S. civilian noninstitutionalized population 17 years of age and over are compared with the 1972 Health Interview Survey hypertension estimates, marked differences are found (15.7 percent and 11.9 percent, respectively). Some of this variation can be attributed to improved data collection procedures implemented in 1974 as well as to definitional differences between the 2 years. These differences will be described in detail in a forthcoming report. However, evidence from other sources also indicates that some of the increase reflects a real difference resulting from a greater awareness of this condition among some respondents.

In this report, terms such as "similar" and "the same" mean that no statistical significance exists between the statistics being compared. Terms relating to differences (i.e., "greater," "less," etc.) indicate that differences are statistically significant. The *t* test with a critical value of 1.96 (0.05 level of significance) was used to test all comparisons which are discussed. Lack of comment regarding the difference between any two statistics does *not* mean the difference was tested and found to be not significant.

Age adjustment is computed by multiplying the specific rate for each age group in the total

U.S. civilian noninstitutionalized population 17 years and over in 1974. The rate is obtained by dividing the cumulative figures previously computed by the total population 17 years and over.

For a more detailed discussion of the limitations and qualifications of data collected in the Health Interview Survey, see an earlier report entitled "Current Estimates from the Health Interview Survey, United States, 1974, *Vital and Health Statistics,* Series 10, No. 100, DHEW Publication No. (HRA) 76-1527.

Blood pressure measurements of persons in the civilian noninstitutionalized population 6-74 years of age collected in the Health and Nutrition Examination Survey from April 1971 through June 1974 have been reported in *Advance Data* (HRA) 77-1250, No. 1, Oct. 18, 1976.

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 3 November 19, 1976 | Public Health Service • Health Resources Administration

Height and Weight of Adults 18-74 Years of Age in the United States[1]

The height and weight measurements in this report were obtained as a part of the Health and Nutrition Examination Survey (HANES). HANES is a program in which measures of nutritional status are collected for a scientifically designed sample representative of the civilian noninstitutionalized population of the United States in a broad range of ages, 1-74 years.[2]

The HANES findings are based on examinations of the 13,671 persons aged 18-74 years from a total group of 20,749 examined persons aged 1-74 years in the 65 primary sampling units (PSU's) which make up the total sample. A nationwide probability sample of 28,043 persons was selected to be examined in 65 PSU's, which were visited between April 1971 and June 1974. The HANES nutrition examination included a general medical examination for indicators of nutritional deficiencies by a physician, a skin examination by a dermatologist, and a dental examination by a dentist. Body measurements were taken by a trained technician; a dietary interview, consisting of a 24-hour recall of food consumption and a food frequency questionnaire, was administered; and numerous laboratory tests were performed on whole blood, serum, plasma, and urine. A description of the sampling process, HANES operation, and response rates has been published.[2]

Estimates in this report are based on weighted observations. The data obtained for the examined persons were inflated to the level of the total population using the appropriate weights to account for both sampling fractions and response results. National estimates of the distribution of height and weight among the U.S. population based on findings from the HANES program will be analyzed and discussed in a future report: "Height and Weight Measurements of Adults 18-74 Years: United States, 1971-74," *Vital and Health Statistics*, Series 11. Selected data from that report are discussed here and shown in tables 1-7.

[1]This report prepared by Sidney Abraham, Clifford L. Johnson, and Matthew F. Najjar, Division of Health Examination Statistics.

[2]National Center for Health Statistics: Plan and operation of the Health and Nutrition Examination Survey, United States, 1971-1973. *Vital and Health Statistics*. Series 1-Nos. 10a and 10b. DHEW Pub. Nos. (HRA) 76-1310 (10a) and (HSM) 73-1310 (10b). Health Resources Administration. Washington. U.S. Government Printing Office, Feb. 1973.

Advance Data from Vital and Health Statistics replaces the supplements to the *Monthly Vital Statistics Report* as the means for early release of selected findings from the health and demographic surveys conducted by the NCHS. Most of these releases will be followed by detailed reports in the *Vital and Health Statistics* series.

Provisional vital statistics as well as advance reports of final data for a year will continue to be published in the *Monthly Vital Statistics Report*.

Advance Data is being distributed on the mailing keys for the *Vital and Health Statistics* series, and people who now receive reports from a particular series will also receive all *Advance Data* releases for that series. Temporarily, the mailing list for the *Monthly Vital Statistics Report (MVSR)* is also being used. *MVSR* readers who wish to continue to receive *Advance Data* issues, as well as other persons who wish to receive all issues, should contact:

National Center for Health Statistics
Room 8-20
5600 Fishers Lane
Rockville, Maryland 20852
Phone: (301) 443-1200

PRINCIPAL FINDINGS

The mean weight of men ag 18-74 years was 172 pounds. The mean wei of men increased from 165 pounds in age group 18-24 years to 178 pounds in age group 35-44 years. Thereafter, it decreased with age to 175 pounds in age group 45-54 years, 171 pounds at 55-64 years, and a low of 164 pounds in the oldest age group measured, 65 years and over.

The mean weight of women was 143 pounds, 29 pounds less than that for men. The mean weight increased with age from a low of 132 pounds at 18-24 years to a high of 149 pounds at ages 45-64 years and then declined to 146 pounds in the oldest age group.

The cross-sectional data on body measurements of adults were obtained on different age cohorts. The age trends show the mean body measurements for successive cohorts of persons of different age groups and reflect the effect of different environmental as well as hereditary influences. The limitations of cross-sectional data are recognized in considering group age changes.

The mean height for men aged 18-74 was 69.0 inches. The highest mean height, 69.7 inches, was found in the youngest age group, 18-24 years, and is 2.4 inches taller than the height in age group 65 years and over, 67.3 inches. This corresponds with a small decrease in height with increasing age, which averages less than one-half inch per decade of age over the range 18-74 years.

Among women the mean height was 63.6 inches, 5.4 inches less than the mean height among men. The mean height for women was highest (64.3 inches), in the youngest age group, as it was for men. The mean height decreased slightly to 64.1 inches at 25-34 years, remained constant at 35-44 years, and then declined to 63.6 inches at 45-54 years, 62.8 inches at 55-64 years, and 62.3 inches in the oldest age group, 65 years and over. The difference between the youngest and oldest age groups is 2.0 inches. The decrease in height with age averages less than one-half inch per decade over the age range of 18-74 years.

In each of the five age groups in the range 18-64 years white men were taller than Negro men. The average difference between heights of white and Negro men in the same age group was about one-half inch. At age group 65 years and over, however, the mean height for Negro and white men was the same. This pattern by age and race is not observed for women. At age groups 18-24 and 25-34 years, white women were, on the average, 0.25 inches taller than Negro women. At ages 35-44, Negro women were

Figure 1. MEAN HEIGHT IN INCHES OF U.S. ADULTS 18-74 YEARS BY AGE AND SEX.

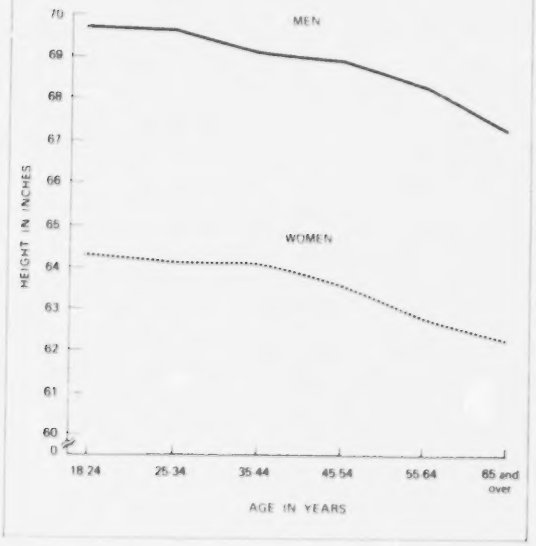
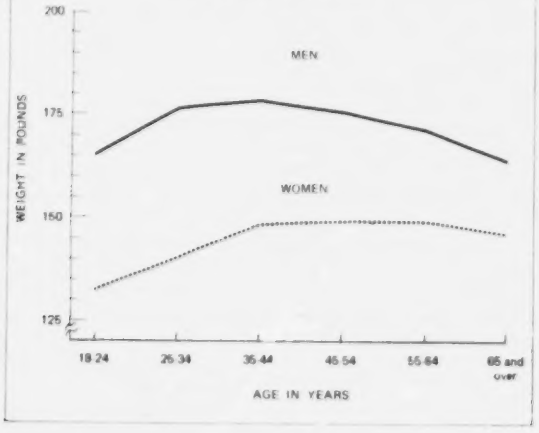


Figure 2. MEAN WEIGHT IN POUNDS OF U.S. ADULTS 18-74 YEARS BY AGE AND SEX.



0.1 inch taller than white women; at ages 45-54, they were 0.2 inch taller; and at ages 65 and over, they were 0.3 inch taller. At ages 55-64 years, the mean height for both races was the same.

Mean weights increased among white men from a low of 165 pounds at 18-24 years to a high of 178 pounds at 35-44 years. Among Negro men, mean weight increased consistently with age from 166 pounds at ages 18-24 years to 182 pounds at ages 35-44 years. The mean weights of both Negro and white men decreased with age from the group 45-54 years on. Negro and white men showed little consistent difference in mean weights among the different age groups.

Data on weight by age for Negro and white women tend to parallel those seen for men, with the exception that the increase in mean weight of women continued up to the age group 45-54 years and then declined. However, at each age Negro women had larger mean weights than white women, with the differences between races being very large, averaging about 20 pounds heavier for the age groups 35-64 years.

Although heights of U.S. adults as measured from the Health and Nutrition Examination Survey, 1971-74, were taller than those from the Health Examination Survey (HES), 1960-62,[3] the differences are numerically small. HANES data for men's heights range from less than one-half inch to an inch taller than the HES data. Corresponding values for women are from less than one-half inch to slightly more than three-quarters of an inch taller.

U.S. adults in HANES were heavier than those in HES. The HANES data on weights for men are consistently higher by an average of 6 pounds across the age range 18-74 years; for women they are higher by an average of 3 pounds for this age range.

Relatively more men and women in the most recent survey, 1971-74, are taller than those in HES, 1960-62. Fifty-one percent of the men in HANES were 69 inches or taller as compared to 38 percent in HES across the age range of 18-74 years. The corresponding values for HANES and HES for heights of 70 inches or more are 36 percent and 28 percent, respectively. In this age range, 45 percent of the women in HANES were 64 inches or taller as

[3]National Center for Health Statistics: Weight, height, and selected body dimensions of adults, United States, 1960-1962. *Vital and Health Statistics.* Series 11-No. 8. DHEW Pub. No. (HRA) 76-1074. Health Resources Administration. Washington. U.S. Government Printing Office, June 1965.

Figure 3. MEAN HEIGHT IN INCHES OF U.S. ADULTS 18-74 YEARS BY AGE, SEX, AND RACE.

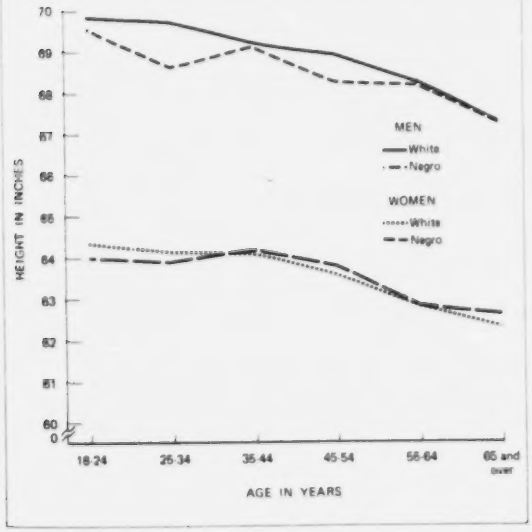


Figure 4. MEAN WEIGHT IN POUNDS OF U.S. ADULTS 18-74 YEARS BY AGE, SEX, AND RACE.

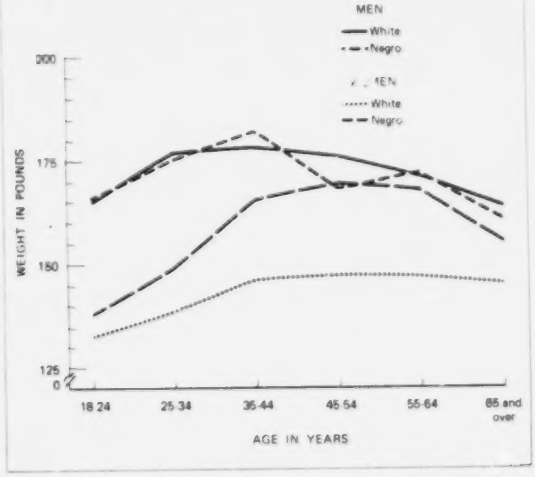
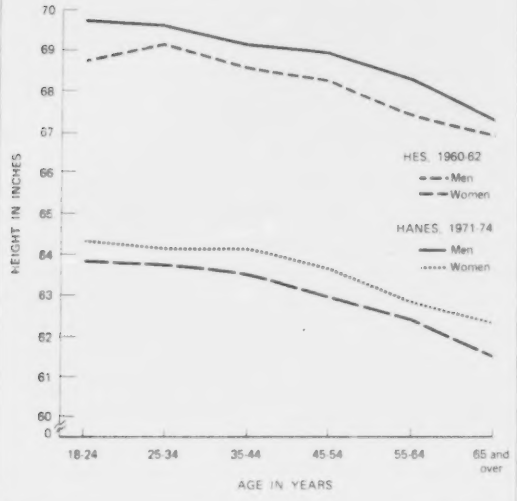


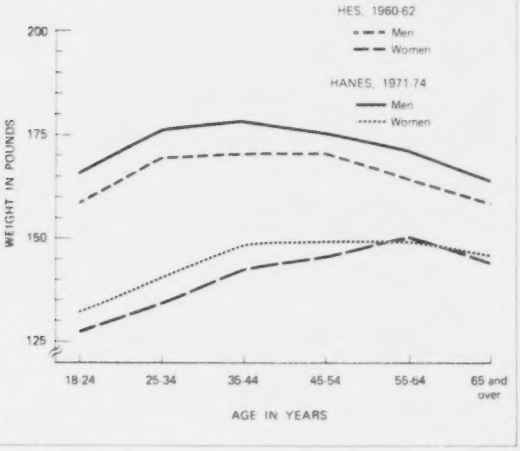
Figure 5. MEAN HEIGHT IN INCHES OF U.S. ADULTS 18-74 YEARS IN HES (1960-62) AND HANES (1971-74).



compared to 37 percent for HES. The corresponding values for HANES and HES for 65 inches and more are 30 percent and 21 percent, respectively.

The proportions of men and women whose height exceeded any other specified height may be found from the data presented in tables 4 and 6.

Figure 6. MEAN WEIGHT IN POUNDS OF U.S. ADULTS 18-74 YEARS IN HES (1960-62) AND HANES (1971-74).



TECHNICAL NOTES

The sampling plan of the Health and Nutrition Examination Survey (HANES) followed a highly stratified multistage probability design in which a sample was selected of the civilian noninstitutionalized population of the coterminous United States 1-74 years of age. Successive elements dealt with in the process of sampling were the primary sampling unit (PSU), census enumeration district (ED), segment (cluster of households), household, eligible person, and finally, sample person. The sampling design focused special attention on groups of people known to be at greater risk of malnutrition by oversampling these groups—the poor, preschool children, women of childbearing ages, and the elderly.

All height and weight data presented are based on "weighted" observations. That is, data recorded for each sample person were inflated to characterize the subuniverse from which that sample person was drawn. For each examined person, this is a product of the reciprocal of the probability of selecting the person, an adjustment for nonresponse cases (i.e., persons not examined), and a poststratified ratio adjustment which increases precision by bringing survey results into closer alignment with known U.S. population figures for 20 age, race, and sex groups as of November 1, 1972, the approximate midpoint of HANES.

SYMBOLS

Data not available	. . .
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

Table 1. Height in inches of adults aged 18-74 years, by sex and age: sample size, estimated population in thousands, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1971-74

Sex and age	Sample size	Estimated population in thousands	Mean	Standard deviation	Standard error of the mean	Percentile						
						5th	10th	25th	50th	75th	90th	95th
			Height in inches									
Men												
18-74 years-	5,260	60,565	69.0	2.8	0.07	64.4	65.5	67.1	69.0	70.8	72.6	73.6
18-24 years-------	772	11,351	69.7	2.8	0.18	65.1	66.1	67.8	69.7	71.5	73.4	74.4
25-34 years-------	804	12,766	69.6	2.9	0.12	64.8	66.0	67.6	69.5	71.5	73.4	74.3
35-44 years-------	665	10,804	69.1	2.7	0.13	64.7	65.8	67.3	69.2	71.1	72.6	73.4
45-54 years-------	765	11,260	68.9	2.6	0.13	64.7	65.6	67.1	68.8	70.6	72.4	73.2
55-64 years-------	597	8,888	68.3	2.6	0.16	64.1	65.1	66.7	68.2	70.1	71.7	72.5
65 years and over-	1,657	5,496	67.3	2.6	0.08	63.2	64.2	65.6	67.3	69.1	70.6	71.6
Women												
18-74 years-	844	67,372	63.6	2.5	0.04	59.5	60.5	62.0	63.7	65.3	66.8	67.8
18-24 years-------	1,524	12,111	64.3	2.5	0.08	60.2	61.2	62.6	64.3	65.8	67.4	68.4
25-34 years-------	1,896	13,996	64.1	2.4	0.08	60.2	61.2	62.4	64.0	65.7	67.3	68.2
35-44 years-------	1,663	11,772	64.1	2.5	0.09	59.9	60.8	62.3	64.1	65.7	67.3	68.4
45-54 years-------	836	12,264	63.6	2.3	0.10	59.9	60.6	62.1	63.7	65.2	66.7	67.3
55-64 years-------	670	9,953	62.8	2.4	0.10	58.6	59.6	61.2	62.8	64.5	65.6	66.6
65 years and over-	1,822	7,277	62.3	2.4	0.08	58.2	59.3	60.8	62.3	63.9	65.3	66.2

NOTE: Height was measured without shoes.

Table 2. Weight in pounds of adults aged 18-74 years, by sex and age: sample size, estimated population in thousands, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1971-74

Sex and age	Sample size	Estimated population in thousands	Mean	Standard deviation	Standard error of the mean	Percentiles						
						5th	10th	25th	50th	75th	90th	95th
			Weight in pounds									
Men												
18-74 years-	5,260	60,565	172	31.1	0.64	128	137	152	170	189	211	225
18-24 years-------	772	11,351	165	29.6	1.64	124	132	145	161	180	204	222
25-34 years-------	804	12,766	176	35.0	1.45	132	140	153	172	193	217	233
35-44 years-------	665	10,804	178	30.0	1.56	132	143	160	176	196	213	225
45-54 years-------	765	11,260	175	29.2	1.12	130	139	157	175	192	215	225
55-64 years-------	597	8,888	171	30.0	1.28	125	137	152	170	187	208	222
65 years and over-	1,657	5,496	164	27.0	0.88	122	130	147	163	180	198	211
Women												
18-74 years-	8,411	67,372	143	32.3	0.53	104	110	122	137	159	185	203
18-24 years-------	1,524	12,111	132	27.4	0.69	100	106	114	128	142	163	181
25-34 years-------	1,896	13,996	140	32.0	0.82	103	109	119	132	152	181	202
35-44 years-------	1,663	11,772	148	35.0	1.14	109	114	124	139	163	195	215
45-54 years-------	836	12,264	149	32.0	1.39	109	114	127	145	164	191	213
55-64 years-------	670	9,953	149	33.3	1.26	104	111	128	144	166	191	203
65 years and over-	1,822	7,277	146	29.1	1.07	105	112	126	142	163	183	195

NOTE: Total weights of all clothing ranged from 0.20 to 0.62 lb., which is not deducted from weights shown in table.

Table 3. Height in inches of adults aged 18-74 years, by sex, race, and age: sample size, estimated population in thousands, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1971-74

Sex, race, and age	Sample size	Estimated population in thousands	Mean	Standard deviation	Standard error of the mean	Percentile						
						5th	10th	25th	50th	75th	90th	95th
MEN												
White						Height in inches						
18-74 years----	4,343	54,109	69.1	2.8	0.08	64.6	65.6	67.2	69.1	70.9	72.7	73.6
18-24 years----------	625	9,849	69.8	2.8	0.20	65.3	66.3	67.9	69.8	71.4	73.4	74.5
25-34 years----------	672	11,191	69.7	2.8	0.13	65.3	66.3	67.7	69.7	71.7	73.4	74.3
35-44 years----------	570	9,857	69.2	2.6	0.13	64.8	65.9	67.5	69.3	71.1	72.6	73.4
45-54 years----------	628	10,117	68.9	2.6	0.14	64.7	65.6	67.2	68.9	70.7	72.5	73.3
55-64 years----------	504	8,125	68.3	2.6	0.17	64.2	65.1	66.7	68.2	70.1	71.7	72.5
65 years and over----	1,344	4,970	67.3	2.6	0.09	63.2	64.2	65.6	67.3	69.1	70.6	71.7
Negro												
18-74 years----	847	5,730	68.6	2.8	0.16	64.1	64.8	66.8	68.6	70.6	72.4	73.3
18-24 years----------	132	1,287	69.5	2.8	0.45	64.6	65.3	67.4	69.8	71.7	72.9	73.6
25-34 years----------	119	1,377	68.6	2.9	0.38	64.1	64.4	66.6	68.6	70.6	72.6	73.7
35-44 years----------	87	820	69.1	3.1	0.44	62.4	65.6	67.2	69.2	71.3	72.8	74.3
45-54 years----------	130	1,087	68.2	2.4	0.26	64.5	65.4	66.6	67.9	69.5	71.3	72.3
55-64 years----------	85	672	68.2	2.3	0.32	64.1	64.4	66.6	68.1	70.1	70.9	71.8
65 years and over----	294	486	67.3	2.4	0.18	63.1	64.2	65.6	67.5	69.1	70.2	70.9
WOMEN												
White												
18-74 years----	6,758	59,482	63.7	2.5	0.05	59.5	60.6	62.0	63.7	65.3	66.8	67.8
18-24 years----------	1,165	10,298	64.3	2.5	0.09	60.3	61.3	62.7	64.3	65.9	67.4	68.4
25-34 years----------	1,539	12,338	64.1	2.5	0.08	60.2	61.2	62.4	64.1	65.8	67.3	68.3
35-44 years----------	1,301	10,250	64.1	2.5	0.09	60.1	60.9	62.4	64.1	65.7	67.3	68.4
45-54 years----------	705	11,091	63.6	2.4	0.11	59.9	60.6	62.0	63.7	65.2	66.7	67.3
55-64 years----------	552	8,905	62.8	2.4	0.11	58.6	59.7	61.2	62.8	64.5	65.6	66.6
65 years and over----	1,496	6,601	62.3	2.4	0.09	58.2	59.2	60.7	62.3	63.9	65.3	66.2
Negro												
18-74 years----	1,557	7,268	63.7	2.5	0.09	59.6	60.6	62.1	63.7	65.3	66.8	67.8
18-24 years----------	329	1,618	64.0	2.4	0.20	60.2	60.9	62.4	64.0	65.4	66.9	68.1
25-34 years----------	335	1,540	63.9	2.3	0.20	60.2	61.2	62.3	63.7	65.3	67.1	67.8
35-44 years----------	334	1,354	64.2	2.5	0.19	59.8	60.7	62.8	64.3	65.6	67.7	68.8
45-54 years----------	126	1,131	63.8	2.2	0.30	60.2	60.7	62.3	63.6	65.6	66.8	67.6
55-64 years----------	115	971	62.8	2.6	0.24	58.4	59.5	61.3	62.8	64.7	66.2	66.9
65 years and over----	318	654	62.6	2.4	0.18	58.7	59.6	61.2	62.5	64.1	65.5	66.2

NOTE: Height was measured without shoes.

Table 4. Cumulative percent distribution of height in inches of adult males, according to age: United States, HES (1960-62) and HANES (1971-74)

Height in inches	Age													
	18-74 years		18-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65 years and over	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 60------	0.1	0.1	-	-	-	0.0	0.1	0.1	0.2	0.2	-	0.2	0.7	0.6
Under 61------	0.3	0.4	-	0.4	0.1	0.2	0.2	0.4	0.4	0.2	0.5	0.5	1.1	1.3
Under 62------	1.0	0.7	0.2	0.4	0.2	0.3	0.5	0.9	0.7	0.5	2.8	0.6	3.2	2.1
Under 63------	2.6	1.7	1.5	1.7	1.5	0.4	1.9	1.6	1.8	1.7	5.2	2.1	5.7	4.4
Under 64------	5.6	3.7	3.7	2.7	3.1	2.5	3.8	3.4	4.8	3.6	12.3	4.2	9.0	8.4
Under 65------	12.4	7.3	7.7	4.5	7.8	5.6	8.7	6.2	11.4	6.2	23.1	9.6	23.4	17.5
Under 66------	19.1	13.6	12.8	9.2	12.2	9.8	14.8	11.1	19.1	13.1	30.3	18.0	35.7	30.7
Under 67------	32.1	23.5	28.6	16.9	22.1	19.2	27.0	20.4	31.5	22.7	43.1	30.1	54.2	44.3
Under 68------	44.0	35.9	41.3	26.4	33.0	29.3	38.6	31.8	44.3	37.1	55.4	46.1	65.4	59.3
Under 69------	62.1	49.5	56.1	39.0	50.4	40.1	57.8	47.0	65.0	52.6	72.9	60.7	82.0	74.1
Under 70------	72.5	63.7	68.7	53.2	62.4	55.8	69.6	61.4	74.3	66.9	81.3	74.5	88.4	84.3
Under 71------	84.5	76.0	81.0	68.5	76.6	69.2	84.0	74.1	86.4	78.9	89.8	83.8	95.4	92.6
Under 72------	90.8	85.0	86.2	80.1	84.4	78.4	92.9	84.7	91.5	86.2	94.3	93.1	99.0	95.9
Under 73------	96.2	92.0	94.7	87.5	92.4	87.1	97.3	92.9	96.7	94.0	98.4	96.7	99.6	99.2
Under 74------	98.4	96.6	97.8	93.9	95.7	94.2	98.9	97.3	99.0	97.8	99.6	98.9	100.0	99.7
Under 75------	99.5	98.4	99.2	96.8	98.8	97.0	99.8	99.0	99.6	99.4	99.8	99.7	100.0	100.0
Under 76------	99.7	99.1	99.8	97.7	99.0	98.4	100.0	99.7	99.9	99.8	99.8	99.7	100.0	100.0
76 and over---	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 5. Weight in pounds of adults aged 18-74 years, by sex, race, and age: sample size, estimated population in thousands, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1971-74

Sex, race, and age	Sample size	Estimated population in thousands	Mean	Standard deviation	Standard error of the mean	Percentile						
						5th	10th	25th	50th	75th	90th	95th
MEN												
White						Weight in pounds						
18-74 years----	4,343	54,109	173	30	0.75	129	138	153	171	190	211	224
18-24 years----------	625	9,849	165	28	1.89	125	133	146	162	182	205	222
25-34 years----------	672	11,191	177	32	1.40	134	142	155	173	194	217	232
35-44 years----------	570	9,857	178	29	1.66	133	145	160	177	195	211	224
45-54 years----------	628	10,117	176	29	1.23	129	141	158	176	193	214	225
55-64 years----------	504	8,125	171	29	1.49	125	136	153	171	187	208	220
65 years and over----	1,344	4,970	164	27	0.99	123	131	148	164	180	198	210
Negro												
18-74 years----	847	5,730	171	40	2.54	125	134	145	163	189	217	239
18-24 years----------	132	1,287	166	37	4.04	123	131	142	159	176	202	227
25-34 years----------	119	1,377	175	51	8.17	124	134	148	162	193	219	235
35-44 years----------	87	820	182	37	4.59	130	137	151	180	201	236	255
45-54 years----------	130	1,087	168	32	3.75	135	136	145	162	185	220	230
55-64 years----------	85	672	172	41	6.34	119	138	145	163	186	237	249
65 years and over----	294	486	161	30	2.31	121	127	137	156	179	205	218
WOMEN												
White												
18-74 years----	6,758	59,482	142	31	0.59	104	110	121	136	157	182	199
18-24 years----------	1,165	10,298	132	26	0.82	100	106	115	128	142	162	177
25-34 years----------	1,539	12,338	138	31	1.02	104	109	118	131	150	179	201
35-44 years----------	1,301	10,250	146	34	1.29	109	114	124	137	159	191	213
45-54 years----------	705	11,091	147	30	1.32	109	113	126	143	162	188	204
55-64 years----------	552	8,905	147	30	1.35	103	111	127	143	164	187	201
65 years and over----	1,496	6,601	145	28	1.08	105	113	126	142	162	180	192
Negro												
18-74 years----	1,557	7,268	156	41	1.53	104	111	129	148	176	207	228
18-24 years----------	329	1,618	138	34	2.47	100	107	114	130	150	184	203
25-34 years----------	335	1,540	149	37	3.20	100	108	127	141	170	190	226
35-44 years----------	334	1,354	165	39	2.68	112	121	136	158	185	216	238
45-54 years----------	126	1,131	169	42	4.53	115	128	139	162	186	215	244
55-64 years----------	115	971	168	48	6.37	104	118	139	156	191	215	297
65 years and over----	318	654	155	36	3.28	94	109	133	153	177	202	219

NOTE: Total weights of all clothing ranged from 0.20 to 0.62 lb., which is not deducted from weights shown in table.

Table 6. Cumulative percent distribution of height in inches of adult females, according to age: United States, HES (1960-62) and HANES (1971-74)

Height in inches	Age													
	18-74 years		18-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65 years and over	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 55------	0.2	0.1	-	0.1	-	0.0	0.1	0.0	0.2	0.0	0.6	0.0	-	0.2
Under 56------	0.4	0.3	-	0.1	0.1	0.2	0.1	0.1	0.5	0.0	1.0	1.0	1.3	0.6
Under 57------	0.7	0.6	0.1	0.3	0.3	0.2	0.5	0.3	0.5	0.4	1.6	1.8	2.0	1.2
Under 58------	2.3	1.4	0.3	0.8	0.9	0.8	1.3	0.6	2.2	0.6	3.3	3.0	8.3	4.0
Under 59------	4.4	3.0	2.1	2.1	1.6	1.9	2.2	1.5	4.0	1.0	7.3	6.2	13.9	8.1
Under 60------	10.8	6.8	5.1	4.1	6.7	4.0	6.9	5.2	11.5	5.1	14.9	11.8	27.5	14.8
Under 61------	18.5	13.5	12.0	8.5	12.2	7.8	14.1	11.2	20.8	13.4	22.9	20.7	38.4	27.2
Under 62------	32.8	24.6	24.6	16.6	22.4	18.2	27.2	19.5	34.0	23.7	43.5	36.7	58.0	43.3
Under 63------	50.7	39.6	40.1	29.8	42.0	33.1	43.8	32.9	55.2	39.9	62.2	52.3	72.1	61.3
Under 64------	63.2	54.8	51.3	45.0	53.5	49.3	57.6	47.2	68.1	55.0	76.3	67.9	82.9	75.5
Under 65------	78.8	69.7	70.6	60.3	71.7	63.2	75.4	63.6	82.5	72.4	87.0	82.1	92.6	86.2
Under 66------	87.1	83.0	81.2	76.7	83.1	77.9	83.9	79.4	89.4	84.4	92.4	92.4	97.5	94.0
Under 67------	94.8	90.8	91.9	86.5	93.9	87.8	94.6	87.8	94.4	92.9	96.4	96.7	99.0	97.4
Under 68------	97.2	95.4	95.3	93.3	97.2	93.9	97.0	93.3	97.2	96.8	98.1	98.6	99.2	98.7
Under 69------	99.3	98.1	98.8	96.6	99.0	97.7	99.1	97.3	99.8	98.7	99.4	99.4	99.8	99.8
Under 70------	99.6	99.2	99.5	98.4	99.3	98.9	99.8	99.0	99.9	99.5	99.4	99.8	99.8	100.0
Under 71------	99.9	99.7	99.9	99.3	99.6	99.7	99.9	99.6	99.9	99.7	100.0	100.0	100.0	100.0
71 and over---	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 7. Comparison of mean heights and weights in HES (1960-62) and HANES (1971-74), by sex and age: United States

Age	Men			Women		
	HES, 1960-62	HANES, 1971-74	Excess of HANES over HES	HES, 1960-62	HANES, 1971-74	Excess of HANES over HES
	Height in inches					
18-74 years	68.3	69.0	+0.7	63.1	63.6	+0.5
18-24 years	68.7	69.7	+1.0	63.8	64.3	+0.5
25-34 years	69.1	69.6	+0.5	63.7	64.1	+0.4
35-44 years	68.5	69.1	+0.6	63.5	64.1	+0.6
45-54 years	68.2	68.9	+0.7	62.9	63.6	+0.7
55-64 years	67.4	68.3	+0.9	62.4	62.8	+0.4
65 years and over	66.9	67.3	+0.4	61.5	62.3	+0.8
	Weight in pounds					
18-74 years	166	172	+6	140	143	+3
18-24 years	158	165	+7	127	132	+5
25-34 years	169	176	+7	134	140	+6
35-44 years	170	178	+8	142	148	+6
45-54 years	170	175	+5	145	149	+4
55-64 years	164	171	+7	150	149	-1
65 years and over	158	164	+6	144	146	+2

NOTE: Height was measured without shoes. 2 lb. are deducted from HES data to allow for weight of clothing; total weights of all clothing for HANES ranged from 0.20 to 0.62 lb., which is not deducted from weights shown.

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 4 January 26, 1977 | Public Health Service · Health Resources Administration

Prevalence of Dermatological Disease Among Persons 1-74 Years of Age: United States [a]

This report presents national estimates of the prevalence of skin pathology, or dermatological disease, among the civilian noninstitutionalized population 1-74 years of age in the United States, based on examination findings from the Health and Nutrition Examination Survey of 1971-74

The Health and Nutrition Examination Survey program in which these data were obtained was designed to measure the nutritional status of the U.S. population as well as certain aspects of general health status and medical care needs in the U.S. population. This is the fourth of the Health Examination Survey programs authorized by the 84th Congress under the National Health Survey Act of 1956. These programs secure information on the prevalence of medically defined illness, including previously unrecognized and undiagnosed conditions, as well as on a variety of physical, physiological, and psychological measures within the population through direct examinations, tests, and measurements, as described in previous publications.[1-4]

The dermatology component of the Health and Nutrition Examination Survey (HANES) was planned at the request of and in cooperation with the Committee on Planning for the National Program for Dermatology of the National Academy of Dermatology. Dr. Marie-Louise T. Johnson, Chairman of the Data Collection Unit for the National Program, was primarily responsible for planning the content of the examination, recruiting the dermatologists, and training them in the examination methodology so as to minimize interobserver variation. This part of the HANES examination included a complete clinical examination of the skin and surrounding tissue that considered normal variations in texture and color, certain manifestations of aging, and all pathological changes. Significant diagnoses were documented by tissue biopsy to determine malignancy or culture to identify fungi whenever possible. Estimates were made of actinic exposure experienced, as well as actinic damage sustained, and of occupational risk from irritant and allergic contractants. For an examinee with a significant hand, foot, or generalized problem, the dermatologist made a judgment about the burden to the examinee in terms of discomfort or disability, about care sought, and about the effect expected from current best care possible.

The examinations of persons in this HANES sample were made at 65 preselected locations throughout the country. Of the 28,043 sample persons selected to represent the 194 million persons 1-74 years of age in the U.S. population, there were 20,749, or 74.0 percent, examined. This corresponds to an effective response rate of 75.2 percent after adjustment is made for the effect of oversampling among the poor, preschool children, women of childbearing age (20-44 years), and the elderly.

This summary is limited to national estimates by age and sex of the prevalence of skin disorders and the principal types of skin disease. The *Code of Skin Diseases* of the Department of Dermatology, New York University (NYU) School of Medicine[5] was used for identifying and classifying skin disorders. Further information on the geographic and socioeconomic distribution of skin pathology, the extent of dis-

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ability or handicap caused by skin conditions, and the extent to which medical care has been sought or needed among the U.S. population will be presented in a forthcoming Series 11 report in the *Vital and Health Statistics* series.[6]

TRENDS

Among persons 1-74 years of age in the United States, nearly one-third (31.2 percent), or an estimated 60.6 million, have one or more significant skin conditions (table 1). These include 3.2 percent, or an estimated 6.1 million, who have three different types of skin conditions; 6.4 percent, or 12.4 million, with two; and 21.6 percent, or 42.0 million, with only one condition. Since the examiner was limited to the identification of no more than three conditions, only the three most serious were recorded. Hence the estimates obtained may somewhat underestimate the true prevalence of specific skin conditions in the population.

The pattern of increase in skin pathology with age is shown in figures 1 and 2 and table 2. The prevalence rates are lowest among children, more than double by ages 12-24 years, decrease slightly by 25-34 years, then steadily increase with age to a maximum at 65-74 years.

Figure 1. PREVALENCE RATES FOR SIGNIFICANT SKIN PATHOLOGY AND PREVALENCE RATES OF SIGNIFICANT SKIN CONDITIONS AMONG PERSONS 1-74 YEARS BY AGE: UNITED STATES, 1971-74.

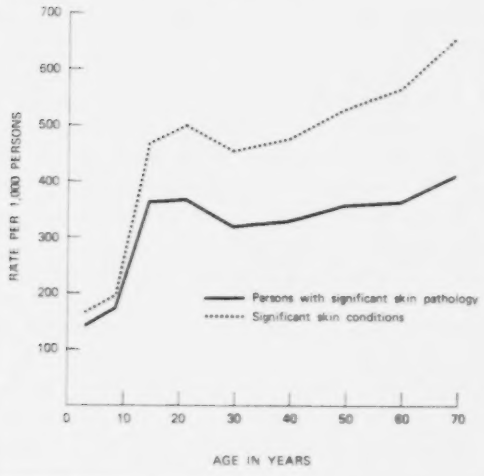
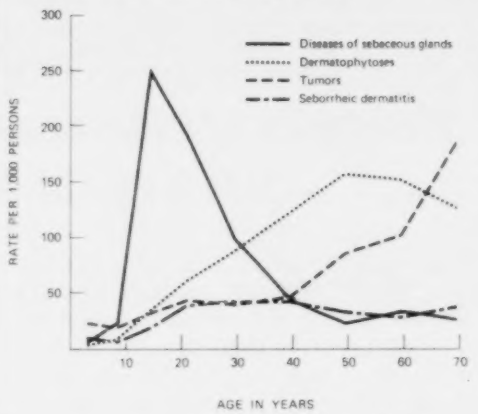


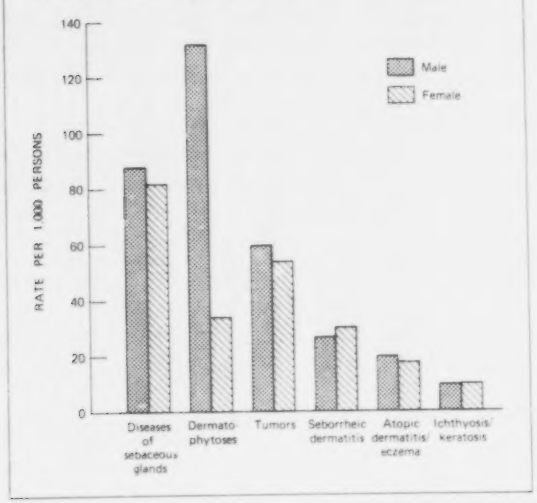
Figure 2. PREVALENCE RATES FOR THE FOUR LEADING TYPES OF SIGNIFICANT SKIN PATHOLOGY AMONG PERSONS 1-74 YEARS BY AGE: UNITED STATES, 1971-74.



The most frequently occurring groups of skin conditions are those affecting the sebaceous glands (84.8 per 1,000 persons); dermatophytoses, or fungal diseases (81.1 per 1,000); malignant or benign tumors (56.5 per 1,000); and seborrheic dermatitis (28.2 per 1,000). Among the individual conditions diagnosed, the most prevalent is acne vulgaris (68.1 per 1,000); followed by benign tumors (38.2 per 1,000); fungal conditions of the feet, tinea pedis (38.7 per 1,000); seborrheic dermatitis (28.2 per 1,000); fungal conditions of the nails, tinea unguium (21.8 per 1,000); precancerous and unspecified tumors (12.4 per 1,000); folliculitis (8.0 per 1,000); verruca vulgaris (8.5 per 1,000); and atopic dermatitis (6.9 per 1,000).

One-third of those persons with significant skin pathology (36.4 percent, or an estimated 22.0 million persons 1-74 years of age) are concerned about their skin problem, and 3.4 percent, or an estimated 2.1 million persons, have a disability severe enough to be a handicap to gainful employment or housework. The principal skin conditions of concern are those affecting the sebaceous glands (28.2 per 1,000); dermatophytoses, or fungal diseases (21.6 per 1,000); the atopic dermatitis/eczema group (10.8 per 1,000); and tumors (8.1 per 1,000) (table 3). However, among those with significant skin pathology diagnosed, persons are most

Figure 3. PREVALENCE RATES FOR THE SIX LEADING TYPES OF SKIN PATHOLOGY AMONG PERSONS 1-74 YEARS OF AGE BY SEX: UNITED STATES, 1971-74.



likely to be concerned if they have psoriasis (69 percent of those with this diagnosis), atopic dermatitis/eczema (58 percent), diseases of the sebaceous glands (33 percent), vitiligo (28 percent), and fungal conditions (dermatophytoses, 27 percent).

Skin pathology is more prevalent among males than among females (34 percent compared with 29 percent), and the proportion with the major types of skin conditions is generally greater among males than among females (figure 3). Of the most frequently occurring skin conditions, males are substantially more likely than females to have a fungal condition or folliculitis, the prevalence being about three times as great in males.

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Table 1. Prevalence of significant skin pathology, all types and the most frequently occurring types of conditions, among persons 1-74 years, by sex: United States, 1971-74

Condition and NYU code	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 1,000 persons			Number in thousands		
Persons with one or more significant skin conditions	312.4	339.8	286.6	60,601	31,988	28,613
All types of significant skin conditions	439.7	499.4	383.4	85,287	47,018	38,269
Diseases of sebaceous glands 7141-7149	84.8	87.9	81.9	16,465	8,279	8,186
Acne vulgaris 714150	68.1	70.5	65.9	13,217	6,638	6,579
Cystic acne 714180	1.9	3.3	0.6	375	312	63
Acne scars 714190	1.7	2.0	1.3	321	192	129
Xerosis 714930	6.5	5.3	7.7	1,260	497	763
Dermatophytoses 131	81.1	131.4	33.7	15,733	12,372	3,361
Tinea pedis 13100-	38.7	68.4	10.7	7,509	6,438	1,071
Tinea unguium 1312--	21.8	30.3	13.9	4,232	2,856	1,376
Tinea versicolor 131910	8.4	10.9	6.0	1,623	1,022	601
Tinea cruris 13131-	6.7	12.9	0.9	1,301	1,214	87
Tumors 19x,22x,23x,23y	56.5	59.6	53.7	10,968	5,606	5,362
Malignant 19x	5.9	6.4	5.3	1,136	602	534
Basal cell (nodular-ulcerative-solid) 19x14x	0.6	0.6	0.7	119	52	67
Basal cell epithelioma 19x18x	1.3	1.6	1.0	247	147	100
Benign[1] 22x	38.2	35.8	40.5	7,412	3,372	4,040
Lipoma 22x959	2.1	2.6	1.6	401	244	157
Precancerous and not specified 23x,23y	12.4	17.4	7.9	2,420	1,632	788
Actinic keratosis 23x081	9.6	13.9	5.5	1,858	1,306	552
Seborrheic dermatitis 700010	28.2	26.4	29.9	5,476	2,490	2,986
Atopic dermatitis/eczema 701,708300,708310,708320	18.4	19.5	17.4	3,575	1,837	1,738
Atopic dermatitis 708310	6.9	8.2	5.6	1,332	771	561
Lichen simplex chronicus 708320	4.5	4.7	4.4	882	441	441
Hand eczema 701000	1.6	1.1	2.1	311	105	206
Nummular 701010	1.7	1.0	2.4	332	92	240
Dyshidrotic 701030	2.1	3.1	1.2	405	288	117
Ichthyosis/keratosis 710130,710150	9.5	9.3	9.6	1,835	880	955
Folliculitis 713908	8.0	12.3	4.0	1,553	1,154	399
Verruca vulgaris 696030	8.5	10.3	7.2	1,684	967	717
Psoriasis 706090	5.5	5.9	5.1	1,070	556	514
Seborrheic keratosis 22x44x	5.2	4.6	5.8	1,010	431	579
Vitiligo 716210	4.9	3.6	6.2	957	341	616
Herpes simplex 096	4.2	4.0	4.5	824	376	448
All other skin conditions	124.9	124.6	124.4	24,137	11,729	12,408

[1] Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

Table 2. Prevalence of significant skin pathology, all types and the most frequently occurring types of conditions, among persons 1-74 years, by age: United States, 1971-74

Condition and NYU code	1-5 years	6-11 years	12-17 years	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years
	Rate per 1,000 persons								
Persons with one or more significant skin conditions	142.3	174.2	362.0	365.1	318.0	328.2	356.8	361.9	409.5
All types of significant skin conditions	166.4	195.4	468.5	499.9	452.9	475.2	529.7	563.9	654.8
Diseases of sebaceous glands--7141-7149	6.3	21.4	249.9	191.1	99.6	44.1	21.5	32.0	25.5
Acne vulgaris--714150	0.4	11.9	231.9	172.2	83.6	25.4	8.7	2.5	0.7
Cystic acne--714180	-	-	2.0	5.4	5.2	2.6	-	-	0.1
Acne scars--714190	-	-	4.5	5.2	0.9	1.7	0.9	-	-
Xerosis--714930	2.8	6.7	3.9	3.7	4.0	6.8	5.4	15.3	14.9
Dermatophytoses--131	3.4	8.4	33.2	61.7	87.7	121.5	155.7	150.8	126.8
Tinea pedis--13100-	0.4	4.0	14.1	24.9	49.1	62.0	80.9	57.9	59.6
Tinea unguium--1312--	-	0.9	1.9	7.0	13.4	24.9	46.2	68.5	54.7
Tinea versicolor--131910	1.1	1.5	10.2	17.8	9.9	13.0	7.2	7.3	2.3
Tinea cruris--13131-	-	-	4.7	6.7	10.2	11.7	13.1	8.9	1.3
Tumors--19x,22x,23x,23y	21.7	18.9	31.3	43.0	39.6	46.8	84.9	100.2	184.1
Malignant--19x	-	-	0.5	0.1	0.1	3.2	9.5	18.9	36.4
Basal cell (nodular-ulcerative-solid)--19x14x	-	-	-	-	-	0.2	1.1	2.1	3.8
Basal cell epithelioma--19x18x	-	-	-	-	-	0.8	3.4	3.9	5.9
Benign[1]--22x	21.7	18.9	30.7	40.7	38.9	38.2	52.9	44.9	68.1
Lipoma--22x959	-	0.8	-	0.9	0.6	1.6	5.3	4.4	7.7
Precancerous and not specified--23x,23y	-	-	0.1	2.2	0.6	5.4	22.5	36.4	79.6
Actinic keratosis--23x081	-	-	-	-	-	1.5	15.9	32.8	65.1
Seborrheic dermatitis--700010	9.6	6.7	18.5	38.7	41.9	41.1	31.9	27.4	36.3
Atopic dermatitis/eczema--701,708300,708310,708320	24.9	20.0	17.0	15.4	28.0	14.7	13.9	12.8	18.3
Atopic dermatitis--708310	19.3	13.8	10.7	5.1	6.0	1.4	2.4	1.0	1.7
Lichen simplex chronicus--708320	-	1.7	4.1	1.2	5.8	5.5	5.2	9.4	10.3
Hand eczema--701000	-	-	0.2	0.3	4.9	3.7	1.5	1.9	0.9
Nummular--701010	1.9	1.3	0.6	4.9	2.5	0.1	0.7	0.6	3.2
Dyshidrotic--701030	-	1.9	0.4	2.6	5.9	1.3	4.0	-	0.4
Ichthyosis/keratosis--710130,710150	8.6	15.5	16.7	8.8	11.5	7.7	2.7	7.0	1.5
Folliculitis--713908	1.2	3.2	5.3	18.9	15.4	12.8	5.5	2.1	1.1
Verruca vulgaris--696030	4.7	13.1	15.5	12.4	6.3	6.2	8.9	2.4	3.6
Psoriasis--706090	3.1	1.9	2.5	1.5	6.2	4.9	11.4	10.9	9.5
Seborrheic keratosis--22x44x	0.2	-	-	0.4	0.4	4.5	9.7	18.3	24.4
Vitiligo--716210	0.6	5.5	1.0	3.6	3.0	3.4	5.9	12.6	13.6
Herpes simplex--096	3.4	3.3	5.1	3.2	5.2	4.8	2.8	3.3	4.6
All other skin conditions	78.7	75.5	72.5	101.2	108.1	162.7	174.9	184.1	205.

[1]Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

Table 3. Prevalence of skin conditions of concern, all types and the most frequently occurring types of conditions, among persons 1-74 years, by part of body affected and sex: United States, 1971-74

Condition and NYU code	Both sexes				Male				Female			
	Total	Hand	Foot	Other	Total	Hand	Foot	Other	Total	Hand	Foot	Other
	Rate per 1,000 persons											
All types of skin conditions of concern---	113.6	10.8	17.9	84.9	127.7	12.6	27.6	87.5	100.3	9.0	8.8	82.5
Diseases of sebaceous glands----------7141-7149	28.2	0.1	0.1	28.0	29.0	-	0.0	29.0	27.5	0.2	0.2	27.1
Acne vulgaris----------714150	23.6	0.1	0.1	23.4	23.1	-	-	23.1	24.1	0.2	0.1	23.8
Cystic acne----------714180	1.7	-	0.0	1.7	3.1	-	0.0	3.1	0.3	-	-	0.3
Acne scars----------714190	0.3	-	-	0.3	-	-	-	-	0.7	-	-	0.7
Xerosis----------714930	0.9	0.0	0.1	0.8	0.8	-	0.0	0.8	0.9	0.0	0.1	0.8
Dermatophytoses----------131	21.6	1.1	12.5	8.0	35.9	1.8	21.3	12.8	8.2	0.4	4.4	3.4
Tinea pedis----------13100-	9.7	0.1	9.3	0.3	17.8	0.2	17.1	0.5	2.0	0.0	2.0	0.0
Tinea unguium----------1312--	4.5	0.2	3.1	1.2	5.7	0.3	3.8	1.6	3.2	0.2	2.3	0.7
Tinea versicolor----------131910	2.7	-	-	2.7	3.5	-	-	3.5	2.0	-	-	2.0
Tinea cruris----------13131-	3.2	-	-	3.2	6.3	-	-	6.3	0.2	-	-	0.2
Tumors----------19x,22x,23x,23y	8.1	0.6	0.4	7.1	8.3	0.5	0.2	7.6	8.1	0.8	0.5	6.8
Malignant----------19x	2.0	0.0	0.1	1.9	2.3	-	0.2	2.1	1.8	0.1	-	1.7
Basal cell (nodular-ulcerative-solid)-19x14x	0.3	-	-	0.3	0.3	-	-	0.3	0.3	-	-	0.3
Basal cell epithelioma----------19x18x	0.8	-	-	0.8	1.3	-	-	1.3	0.3	-	-	0.3
Benign[1]----------22x	2.4	0.1	0.2	2.1	1.5	-	-	1.5	3.4	0.3	0.4	2.7
Lipoma----------22x959	0.1	-	0.0	0.1	0.2	-	-	0.2	0.0	-	0.0	0.0
Precancerous and not specified----------23x,23y	3.7	0.5	0.1	3.1	4.5	0.5	-	4.0	2.9	0.4	0.1	2.4
Actinic keratosis----------23x081	3.1	0.5	-	2.6	3.8	0.5	-	3.3	2.4	0.4	-	2.0
Seborrheic dermatitis----------700010	5.4	0.1	0.0	5.3	4.8	0.2	0.1	4.5	5.9	-	-	5.9
Atopic dermatitis/ eczema----------701,708300,708310,708320	10.8	3.1	1.3	6.4	11.7	3.4	1.9	6.4	10.0	3.0	0.6	6.4
Atopic dermatitis----------708310	4.5	0.6	0.1	3.8	5.1	0.8	0.1	4.2	3.8	0.3	0.1	3.4
Lichen simplex chronicus----------708320	1.9	0.1	0.2	1.6	2.1	-	0.4	1.7	1.8	0.1	0.0	1.7
Hand eczema----------701000	1.1	1.1	-	-	1.0	1.0	-	-	1.2	1.2	-	-
Nummular----------701010	0.8	0.2	0.2	0.4	0.8	0.3	0.3	0.2	0.9	-	-	0.8
Dyshidrotic----------701030	1.6	1.0	0.5	0.1	2.1	1.0	1.1	-	1.2	1.0	0.0	0.2
Ichthyosis/keratosis----------710130,710150	1.3	-	-	1.3	1.3	-	-	1.3	1.3	-	-	1.3
Folliculitis----------713908	1.8	-	-	1.8	2.7	-	-	2.7	0.9	-	-	0.9
Verruca vulgaris----------696030	1.4	0.8	0.2	0.4	0.9	0.3	0.1	0.5	1.8	1.3	0.2	0.3
Psoriasis----------706090	3.8	0.5	0.0	3.3	3.8	0.7	-	3.1	3.8	0.2	0.1	3.5
Seborrheic keratosis----------22x44x	0.7	-	-	0.7	0.4	-	-	0.4	1.1	-	-	1.1
Vitiligo----------716210	1.4	0.1	0.0	1.3	0.7	0.1	0.1	0.5	2.0	0.0	0.0	2.0
Herpes simplex----------096	0.8	-	-	0.8	0.6	-	-	0.6	0.9	-	-	0.9
All other skin conditions----------	28.3	4.4	3.4	20.5	27.6	5.6	3.9	18.1	28.8	3.1	2.8	22.9

[1]Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

TECHNICAL NOTES

The sampling plan for the 65 examination locations in the Health and Nutrition Examination Survey from April 1971 through June 1974 followed a stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the coterminous United States 1-74 years of age was selected. The sample was stratified by geographic region, population density, and rate of population change between 1960 and 1970. Within each stratum, cluster-type sampling was used for selecting households and sample persons to be included in each examination location. The sample design provided for oversampling among persons living in poverty areas, preschool-age children, and women 20-44 years of age.

Prevalence rates of skin conditions are shown as population estimates; that is, the examination findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and a poststratified ratio adjustment were also made so that the final sample estimates of the population size agree exactly with independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by color, sex, and age.

Previous issues of *Advance Data from Vital and Health Statistics*

No. 1 Blood Pressure of Persons 6-74 Years of Age in the United States (Issued: October 18, 1976)

No. 2 Hypertension: United States, 1974 (Issued: November 8, 1976)

No. 3 Height and Weight of Adults 18-74 Years of Age in the United States (Issued: November 19, 1976)

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

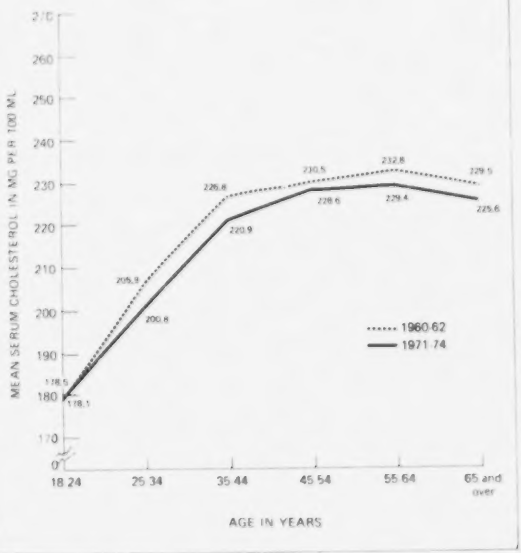
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 5. February 22, 1977 | Public Health Service • Health Resources Administration

A Comparison of Levels of Serum Cholesterol of Adults 18-74 Years of Age in the United States in 1960-62 and 1971-74[a]

Serum cholesterol data obtained from the findings of the Health and Nutrition Examination Survey (HANES), 1971-74, present an opportunity to reexamine the level of serum cholesterol of the U.S. population aged 18-74 years.[1] Earlier determinations of serum cholesterol levels were made in the first cycle of the Health Examination Survey (HES), 1960-62, in order to provide reference data for the general population of the United States.[2] This was prompted by the epidemiologic studies associating levels of total blood cholesterol with the risk of development of coronary heart disease.[3-5]

Field data collection operations for the first HANES survey were started in April 1971 and completed in June 1974. Of the 28,043 persons aged 1-74 years who were selected in the national probability sample to represent the 194 million persons in that age group in the civilian noninstitutionalized population, 20,749, or 74.0 percent, were examined. When adjustments were made for the differential sampling ratios used for the effect of oversampling among the poor, preschool children, women of childbearing age, and the elderly, this corresponds to an effective response rate of 75 percent. Among those 18-74 years of age at interview for whom serum cholesterol determinations were made, there were 13,645 examined out of the probability sample of 19,572 selected to represent the 128 million of that age in the population. This is an unadjusted response rate of 70 percent and an effective adjusted response of 70 percent. A detailed description of the sample and response of the Health Examination Survey of 1960-62 has been published.[6] Detailed estimates of the distribution of serum cholesterol levels will be described and analyzed in a forthcoming report in Series 11[7] of *Vital and Health Statistics*. Selected data and findings from that report on the comparison of levels of serum cholesterol in the United States in 1960-62 and 1971-74 are presented here (tables 1-3 and figures 1-4).

Figure 1. MEAN SERUM CHOLESTEROL LEVEL OF MEN 18-74 YEARS BY AGE: UNITED STATES, 1960-62 AND 1971-74



[a]This report prepared by Sidney Abraham, Clifford L. Johnson, and Margaret D. Carroll, Division of Health Examination Statistics.

CHOLESTEROL DETERMINATIONS—HES AND HANES

Serum cholesterol determinations for HES were made using a modified ferric-chloride technique at the Lipid Standardization Laboratory of the (then) Communicable Disease Center (CDC), Public Health Service, Atlanta, Georgia. A comparative study of cholesterol methods which was conducted by CDC during the course of the Health Examination Survey determined that the ferric- sulfuric method in use was positively biased with respect to the method of Abell, Levy, Brodie, and Kendall, which was chosen as a basis of reference for its close approximation to "true" serum cholesterol values.[2] The data in the HES report presented here are therefore the original ferric-chloride values reduced by a factor of 7.6 percent to approximate Abell et al. determinations.

All serum cholesterol determinations for HANES were made in the Lipid Standardization Laboratory of what is now the Center for Disease Control, Public Health Service, Atlanta, Georgia. The analytical method was based on that of Abell et al.[8] but was modified for a semiautomated production line. The method, described in detail by Eavenson et al.[9] was made possible by the development of a relatively stable Liebermann color reagent and was designed for automatic pipetting units.

The Lipid Laboratory at the Center for Disease Control compared the results obtained with this semiautomated Abell et al. method and those obtained from their standardized version of Abell et al.[8] For examining the bias of the semiautomated method, data were obtained from pools of sera analyzed by the reference method and the semiautomated method. For pools ranging from 134 to 343 mg per 100 ml, there was in 1972 an average positive bias of 4.07 percent for the semiautomated method compared with the standard method; for the 1973-74 period, the corresponding figure was a positive bias of 4.9 percent. The weighted average bias was 4.5 percent. Therefore the data presented here are the original values produced by the semiautomated method diminished by 4.5 percent to approximate Abell et al. determinations.

Figure 2. MEAN SERUM CHOLESTEROL LEVEL OF WOMEN 18-74 YEARS BY AGE: UNITED STATES, 1960-62 AND 1971-74

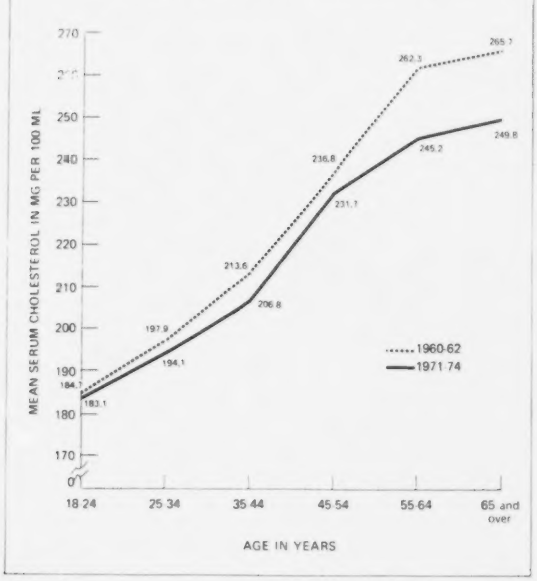
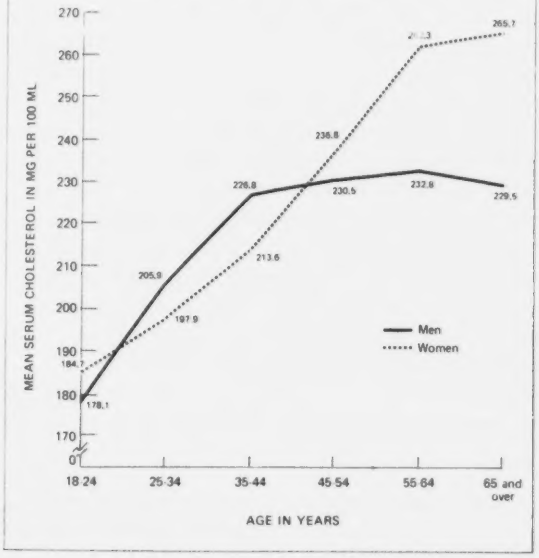


Figure 3. MEAN SERUM CHOLESTEROL LEVEL OF ADULTS 18-74 YEARS BY AGE AND SEX: UNITED STATES, 1960-62



However, in the later report,[7] HANES 1971-74 serum cholesterol data will be presented without correction for bias when no comparisons are made between HANES data and the data from HES, 1960-62. Those data will thus provide population reference standards for determinations made by the semiautomated methodology now in use.

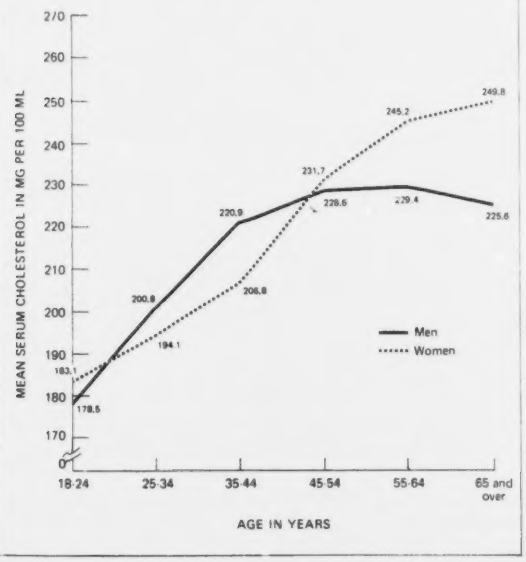
FINDINGS

Figure 1 and table 2 show that in all age groupings mean serum cholesterol levels for men in the HES sample are slightly higher than those for men in the HANES sample except for the age group 18-24 years, when the HANES sample is 0.4 mg per 100 ml higher than that for the HES sample. In other age groups the differences range from 1.9 to 5.9 mg per 100 ml, and are not significant ($P>.05$). The mean levels for men in both data sets increase rapidly to the age group 35-44 years and increase less rapidly to the age groups 45-54 and 55-64 years. A slight decline occurs in the age group 65-74 years.

Figure 2 and table 1 show that the mean levels for women in the HES sample are higher than the levels for women in the HANES sample in all age groups. In the age groups under 55 years, with the exception of ages 35-44 years, the differences are small, 1.6 to 5.1 mg per 100 ml, and are not significant ($P>.05$). In age group 35-44 and in the older age groups 55 years and over the mean levels in the HES sample are significantly higher than those in the HANES sample. The differences in mean levels are 17.1 and 15.9 mg per 100 ml, respectively, for age groups 55-64 and 65-74 years and 6.8 mg per 100 ml for the age group 35-44 years.

The mean levels for women from HES and HANES sets of data increase with age but in a slightly different pattern. The mean levels for women in the HES sample increase to the age group 55-64 years, with the rate of increase more rapid for those in the midfifties and midsixties than for those in the earlier ages. The rate of increase then diminishes substantially, with the levels attaining a peak in the oldest age group 65-74 years. The rate of increase in the mean levels in the HANES sample show a similar pattern before age 55. However, the mean levels increase less rapidly in the midsixties, and then flatten out, with the levels also attaining a peak in the age group 65-74 years.

Figure 4. MEAN SERUM CHOLESTEROL LEVEL OF ADULTS 18-74 YEARS BY AGE AND SEX: UNITED STATES, 1971-74



Sex Differences by Age—HES and HANES

Figure 3 shows that in the HES sample in each sex group the mean level increases with age but in different patterns. Levels for men increase rapidly to the decade 35-44 years. The rate of increase then flattens out, with levels reaching a peak in the decade 55-64 years and declining slightly thereafter. Mean levels for women are higher than those for men in the youngest age group, 18-24 years. They increase less rapidly than those for men in the midthirties and midforties but increase much more rapidly than men's levels after age 45. Thus the mean levels for women exceed those for men in the age group 45-54 years and at all ages thereafter.

Figure 4 shows the mean serum cholesterol levels in the HANES sample of adults. As in the HES sample, mean levels for women are higher than those for men in the youngest age group, 18-24 years. After age 25, the mean levels in the HANES sample generally show the same pattern as observed in the HES sample for women and

men. The mean levels for women increase less rapidly than those for men in the age groups 25-34 and 35-44 years but increase much more rapidly than men's levels after age 45. Here the levels for women exceed those for men in the age group 45-54 years and at all older ages. The levels for men peak at the age group 55-64 years and then decline, while the levels for women continue to rise.

A comparison of proportions of persons in HES and HANES whose serum cholesterol values exceed any specified level may be found in table 2 for men and in table 3 for women.

SUMMARY AND CONCLUSION

Prospective as well as cross-sectional epidemiologic studies associate the level of serum cholesterol with risk of developing coronary heart disease. The two surveys conducted in representative samples of the U.S. population by the National Center for Health Statistics were presented and analyzed by age and sex. They provide cross-sectional data of serum cholesterol determinations of adults obtained on different age cohorts. The age trends present the mean levels for successive cohorts of persons of different age groups reflecting the effect of environmental as well as hereditary influences. The mean level of serum cholesterol of men in each age group for the HANES sample shows a slight decrease over that obtained for the HES sample. The percent decrease in mean levels ranges from 0.8 percent in the age group 45-54 years to 2.6 percent in the age group 35-44 years.

The actual differences in means of the levels of serum cholesterol of men from the two surveys at corresponding ages are numerically small. Maximum differences are 5.9 mg per 100 ml at age 35-44 years. At other ages the HES data range from 1.9 mg per 100 ml to 5.1 mg per 100 ml greater than the HANES data.

For women in the age groups under 55 years with the exception of ages 35-44 years, the mean levels of serum cholesterol in the HANES sample show a slight decrease over the levels of the HES sample. The maximum difference is 5.1 mg per 100 ml at ages 45-54 years. At ages 18-24 and 25-34 years, the differences are 1.6 and 3.8 mg per 100 ml, respectively. The differences at ages 35-44, 55-64, and 65-74 years are 6.8, 17.1, and 15.9 mg per 100 ml. Only at these ages were the differences significant at the 0.05 level.

Both laboratory methods (1960-62 and 1971-74) show positive biases relative to a common reference method. These biases can be compared and corrected for comparisons between the 1960-62 and 1971-74 surveys. This has been done in this report. The 1971-74 data are diminished by 4.5 percent to make them comparable to the 1960-62 data which were presented already corrected by 7.6 percent to the reference method. The reference method may be presumed to be stable over time, but there were no pools of sera which were analyzed in both study periods to assure that a shift in the accuracy of this reference method did not occur because such pools are not available.

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[9]Eavenson, D., Grier, O. T., Cisson, J. G., and Witter, R. F.: A semiautomated procedure for the determination of serum cholesterol using the Abell-Kendall method. *J. Amer. Oil Chem. Soc.* 43: 652. 1966.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

Table 1. Serum cholesterol level of adults aged 18-74 years by sex and age, with number of examined persons, mean, and standard deviation: United States, 1960-62 (HES) and 1971-74 (HANES)

Age	Men						Women					
	1960-62			1971-74			1960-62			1971-74		
	n[1]	Mean	s[2]	n[1]	Mean	s[2]	n[1]	Mean	s[2]	n[1]	Mean	s[2]
18-24 years..	406	178.1	40.7	772	178.5	35.0	515	184.7	47.9	1,524	183.1	39.1
25-34 years..	661	205.9	44.6	804	200.8	42.0	729	197.9	41.9	1,896	194.1	40.3
35-44 years..	691	226.8	49.4	665	220.9	43.9	762	213.6	45.3	1,663	206.8	41.5
45-54 years..	533	230.5	45.6	765	228.6	44.9	679	236.8	50.0	836	231.7	49.6
55-64 years..	410	232.8	49.0	597	229.4	48.9	426	262.3	63.0	670	245.2	46.0
65-74 years..	262	229.5	47.3	1,657	225.6	51.3	289	265.7	58.8	1,822	249.8	49.6

[1] n denotes number of examined persons.
[2] s denotes standard deviation.

NOTE: The distribution of the number of persons examined by age and sex is different for HES and HANES because different sampling rates were applied to the subgroups, but within subgroups sampling rates are representative of the U.S. population at the time of the survey.

Table 2. Cumulative percent distribution of serum cholesterol levels of adult males by age: United States, 1960-62 (HES) and 1971-74 (HANES)

Serum cholesterol level (mg/100ml)	18-74 years		18-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65-74 years	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 100	0.1	0.2	0.4	0.1	-	0.1	0.1	-	-	0.7	0.2	0.1	-	0.2
Under 120	0.8	0.9	2.9	2.4	0.6	1.1	0.6	0.1	0.1	0.7	0.7	0.1	-	0.7
Under 140	3.3	4.1	14.4	11.8	2.6	4.1	1.5	1.7	0.3	1.4	1.5	1.7	1.3	2.7
Under 160	9.6	12.2	33.1	31.1	10.2	14.7	5.3	6.2	3.7	6.0	4.4	3.3	4.1	6.2
Under 180	21.2	25.7	57.9	55.1	27.5	32.7	14.1	17.6	9.4	11.8	11.1	12.4	10.3	14.6
Under 200	35.7	42.3	73.8	76.6	47.7	53.6	25.4	32.8	22.6	24.2	22.1	24.2	26.5	29.8
Under 220	53.4	59.0	86.8	87.5	66.5	70.8	45.8	51.6	42.6	41.8	36.4	42.9	43.3	47.9
Under 240	70.4	74.5	93.6	94.1	81.4	84.3	66.1	68.5	60.8	62.6	58.3	63.2	62.0	65.5
Under 260	82.4	85.3	96.1	97.2	89.6	91.8	79.8	82.9	74.3	75.9	76.5	79.8	78.4	79.1
Under 280	90.6	91.8	99.1	98.6	95.5	96.3	88.3	90.0	86.3	86.4	87.8	87.3	86.7	88.8
Under 300	95.3	95.9	99.4	99.8	98.0	97.9	93.0	93.8	94.7	94.4	93.0	93.3	93.9	94.3
Under 320	97.9	97.8	99.6	99.8	99.8	98.7	96.9	97.8	98.6	96.5	96.4	96.2	96.5	96.9
Under 340	98.9	99.0	99.8	100.0	99.8	99.0	97.9	99.3	99.4	98.9	98.6	97.9	98.3	97.8
Under 360	99.4	99.4	99.8	100.0	99.8	99.4	99.0	99.4	99.9	99.7	99.1	98.8	98.9	98.9
Under 380	99.6	99.6	99.8	100.0	99.8	99.4	99.6	99.7	99.9	100.0	99.3	99.1	99.5	99.1

Table 3. Cumulative percent distribution of serum cholesterol levels of adult females by age: United States, 1960-62 (HES) and 1971-74 (HANES)[1]

Serum cholesterol level (mg/100ml)	18-74 years		18-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65-74 years	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 100	0.1	0.2	0.3	0.4	-	0.6	-	0.3	-	-	-	-	0.3	-
Under 120	0.8	1.1	2.9	2.9	0.8	1.6	0.6	0.7	-	0.3	-	0.1	0.7	0.6
Under 140	2.8	4.5	9.2	11.5	4.4	7.1	1.8	3.2	0.6	0.7	-	0.4	1.1	1.7
Under 160	9.3	12.3	28.3	28.9	15.1	17.4	6.5	11.0	2.7	4.8	0.1	2.7	1.5	3.1
Under 180	20.9	24.3	49.4	49.7	33.8	36.3	19.6	23.5	7.9	11.6	3.5	6.3	6.0	6.0
Under 200	35.2	41.4	69.8	69.5	55.8	60.4	38.3	46.3	18.1	25.7	7.7	15.3	8.8	13.0
Under 220	51.9	57.9	84.9	83.5	74.5	77.5	62.1	67.0	35.0	43.7	17.9	29.8	17.6	24.9
Under 240	64.9	71.8	91.0	92.1	86.5	88.3	76.8	80.7	53.0	61.8	29.9	47.3	31.4	42.5
Under 260	77.3	82.5	95.4	97.0	92.6	94.4	87.1	90.4	72.0	75.5	50.3	64.7	49.0	59.3
Under 280	85.5	89.4	97.5	97.9	95.7	97.5	93.0	94.7	84.7	85.0	64.1	76.9	64.8	76.0
Under 300	91.8	94.3	98.2	99.3	98.6	98.8	97.1	97.8	93.7	90.8	79.1	88.1	73.3	86.1
Under 320	95.4	97.1	99.0	99.8	99.3	99.1	98.4	98.9	96.3	95.3	88.3	94.4	84.7	92.2
Under 340	97.8	98.2	99.7	99.8	99.6	99.7	98.9	99.5	98.6	96.5	95.3	96.4	91.8	96.2
Under 360	98.8	99.2	99.9	99.8	99.7	99.8	99.3	99.6	99.5	98.4	98.3	98.9	94.2	98.3
Under 380	99.4	99.5	99.9	99.9	99.9	99.8	99.5	99.7	99.6	99.0	99.6	99.4	97.0	99.1

TECHNICAL NOTES

The sampling plan for the 65 preselected examination locations in the Health and Nutrition Examination Survey followed a highly stratified multistage probability design in which a sample of the civilian, noninstitutionalized population of the conterminous United States 1 to 74 years of age was selected. Successive elements dealt with in the process of sampling were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and sample person. The sampling design provided for oversampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The serum cholesterol determinations are shown as population estimates, that is, the serum cholesterol findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and poststratified ratio adjustments were also made and so the final sampling estimates of the population size agree exactly with the U.S. Bureau of the Census independent estimates for the civilian, noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

Previous issues of *Advance Data From Vital and Health Statistics*

No. 1 Blood Pressure of Persons 6-74 Years of Age in the United States (Issued: October 18, 1976)

No. 2 Hypertension: United States, 1974 (Issued: November 8, 1976)

No. 3 Height and Weight of Adults 18-74 Years in the United States (Issued: November 19, 1976)

No. 4 Prevalence of Dermatological Diseases Among Persons 1-74 Years of Age, United States (Issued: January 26, 1977)

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 6 March 30, 1977 | Public Health Service • Health Resources Administration

Dietary Intake of Persons 1-74 Years of Age in the United States[a]

Information on food intake for 1 day was obtained during the Health and Nutrition Examination Survey (HANES) conducted by the National Center for Health Statistics April 1971 through June 1974 from a national probability sample of persons 1-74 years of age in the U.S. civilian noninstitutional population.

Dietary intake data in HANES were obtained at 65 primary sampling units on 28,043 sample persons selected to represent 194 million persons aged 1-74 years in the U.S. population. The program examined 20,749 persons, or 74 percent of the sample. This represents an effective response rate of 75 percent when adjustment is made for the effect of oversampling among the poor, preschool children, women of childbearing age, and the elderly. Detailed estimates of the distribution of calories and selected nutrient intakes ingested on a single day and the proportions of persons who did not ingest on that day the levels of nutrients necessary to meet the recommended daily allowance will be described and analyzed in a forthcoming report in the *Vital and Health Statistics* series.[1] Selected means as they relate to the recommended daily allowances from that report are presented here in tables 1-8 and in figures 1-3.

Information on food intake was obtained by the 24-hour recall method for the day, midnight to midnight, preceeding the interview. The 24-hour period accounted for all regular meals eaten as well as for between-meal foods or snacks. Food recall included foods eaten on Monday through Friday but excluded foods eaten on weekends which may pertain to unusual food intakes.

Individual nutrient intakes for the single day reported are evaluated in relation to recommended dietary allowances. The mean of the percentages of the nutrient standard is presented. This mean is a crude estimate of desirable or expected nutrient intakes, and it proves useful for comparisons of dietary intake data between population subgroups. However, percents of standard below 100 do not necessarily mean inadequate nutrient intakes. The recommended allowances are designed for the maintenance of good nutrition in healthy persons in the United States. They allow for some margin above what is really needed by most individuals with the objective of maintaining good health in all. As a guideline to interpreting the dietary data, a set of recommended daily allowances for the evaluation of HANES dietary data was developed with advice from an *ad hoc* advisory group. The groups considered recommended daily allowances from the World Health Organization,[2] the Interdepartmental Committee on Nutrition for National Defense Manual,[3] the National Research Council Food and Nutrition Board Recommended Dietary Allowances,[4] and from those used in the Ten-State Nutrition Survey.[5] Except for protein and calories, the recommended daily allowances as presented in table A are all related to age, physiological state, or to caloric intake.

Standards for assessing caloric and protein allowances for adults are based on expected median body weight for sex and height at ages 20-29 years. More specifically, an expected body weight at ages 20-29 years was computed for each individual adult based on height and sex. The median of the distribution of expected

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[a]This report prepared by Sidney Abraham, Margaret D. Carroll, M.S.P.H., Connie M. Dresser, R.D., and Clifford L. Johnson, M.S.P.H., *Division of Health Examination Statistics.*

weight for each height and sex group was determined. The standardized allowance for each individual 20 years and over was then calculated by multiplying the median expected weight for height and sex by the recommended nutrient allowance per kilogram of body weight (table A). The resultant product was then taken as that individual's sex-height-standardized allowance. The reported caloric or protein intake for each individual was then divided by this standardized allowance to arrive at the "percent of recommended daily allowance." Height-sex-specific weight at ages 20-29 is used because at these ages it is thought to most closely approximate the body's cell mass. Cell mass, the metabolically active part of the body, is the major determinant of adult nutrient needs. Weight gain after 20-29 years is presumed to be fat, with little

Figure 1. Mean intake of calories and selected nutrients as a percent below recommended dietary allowance, by income level, sex, and age: United States, 1971-74.

[Based on 1-day diet; 24-hour recall]

Sex and age	Calories			Protein (gm)			Calcium (mg)			Iron (mg)		
	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]
Male												
1 year										xxxx	xxxx	xxxx
2-3 years										xxxx	xxxx	xxxx
4-5 years										x	x	x
6-7 years												
8-9 years	x	x	x									
10-11 years	x	xxx	x									
12-14 years	xx	xxx	xx							x	x	x
15-17 years	xx	xxx	xx							x	xxx	x
18-19 years	x	xx	x							x	xx	x
20-24 years	x	xx	x									
25-34 years	x	xx	x									
35-44 years	x	x	x									
45-54 years	xx	xxx	xx									
55-64 years	xx	xxxx	xx		x							
65 years and over	xxx	xxxx	xxx	x	x							
Female												
1 year										xxxx	xxxx	xxxx
2-3 years										xxxx	xxxx	xxxx
4-5 years										xx	xx	xx
6-7 years	x	x	x							x	xx	x
8-9 years	xxx	xx	xxx							x		x
10-11 years	xx	xx	xx							xxxx	xxxx	xxxx
12-14 years	xxx	xxx	xxx							xxxx	xxxx	xxxx
15-17 years	xxxx	xxxx	xxxx	x	xx					xxxx	xxxx	xxxx
18-19 years	xx	xx	xx							xxxx	xxxx	xxxx
20-24 years	xxx	xxx	xxx		x					xxxx	xxxx	xxxx
25-34 years	xx	xx	xx		x			x		xxxx	xxxx	xxxx
35-44 years	xx	xxx	xx		x			xx		xxxx	xxxx	xxxx
45-54 years	xx	xx	xx		x		x	x	x	xxxx	xxxx	xxxx
55-64 years	xx	xxx	xx	x	xx	x	x	x	x	x	xx	x
65 years and over	xxx	xxx	xxx	x	xx	x	x	xx	x	x	xx	x

KEY

x = Below by 1-10 percent
xx = Below by 11-20 percent
xxx = Below by 21-29 percent
xxxx = Below by 30 percent or more

[1] Excludes persons with unknown income.

NOTE: There was no one observed below the recommended dietary allowance for vitamins A and C, thiamine, and riboflavin.

increase of the body's cell mass. In fact, cell mass tends to decrease with age even as weight increases,[6] which indicates that these standardized allowances tend to overstate the nutrient needs of older people as compared with younger. This bias is much less, however, than the presentation of nutrient intake per kilogram of body weight. Those who weigh less than the height-sex-specific weight at 20-29 years of age are presumed to be underweight, and their nutrient needs may be presumed to be greater than their weight implied.

A similar method was used to obtain height-standardized allowances for assessing caloric and protein dietary intakes of children. The expected median body weight for age, sex, and height was derived from anthropometric data collected in HANES.

In addition to age and race, income status is another population characteristic considered when nutritional data are presented because quantity and quality of dietary intake have been known to be associated with level of income.

Table A. Standards for evaluation of daily dietary intake used in the Health and Nutrition Examination Survey, by age, sex, and physiological state: United States, 1971-74

Age, sex, and physiological state	Calories (per kg)	Protein (gm per kg)	Calcium (mg)	Iron (mg)	Vitamin A[1] (I.U.)	Vitamin C (mg)	B vitamins (all ages)
Age and sex							
1-5 years:							Thiamine 0.4 mg per 1,000 calories Riboflavin 0.55 mg per 1,000 calories Niacin 6.6 mg per 1,000 calories
12-23 months, male and female	90	1.9	450	15	2,000	40	
24-47 months, male and female	86	1.7	450	15	2,000	40	
48-71 months, male and female	82	1.5	450	10	2,000	40	
6-7 years, male and female	82	1.3	450	10	2,500	40	
8-9 years, male and female	82	1.3	450	10	2,500	40	
10-12 years Male	68	1.2	650	10	2,500	40	
Female	64	1.2	650	18	2,500	40	
13-16 years Male	60	1.2	650	18	3,500	50	
Female	48	1.2	650	18	3,500	50	
17-19 years Male	44	1.1	550	18	3,500	55	
Female	35	1.1	550	18	3,500	50	
20-29 years Male	40	1.0	400	10	3,500	60	
Female	35	1.0	600	18	3,500	55	
30-39 years Male	38	1.0	400	10	3,500	60	
Female	33	1.0	600	18	3,500	55	
40-49 years Male	37	1.0	400	10	3,500	60	
Female	31	1.0	600	18	3,500	55	
50-54 years Male	36	1.0	400	10	3,500	60	
Female	30	1.0	600	18	3,500	55	
55-59 years Male	36	1.0	400	10	3,500	60	
Female	30	1.0	600	10	3,500	55	
60-69 years Male	34	1.0	400	10	3,500	60	
Female	29	1.0	600	10	3,500	55	
70 years and over Male	34	1.0	400	10	3,500	60	
Female	29	1.0	600	10	3,500	55	
Physiological state							
Pregnancy (5th month and beyond), add to basic standard	200	20	200		1,000	[2]5	
Lactating, add to basic standard	1,000	25	500		1,000	5	

[1] Assumed 70 percent carotene, 30 percent retinol.
[2] For all pregnancies.

The income status for each examined person is expressed by the Poverty Income Ratio (table B). Families and unrelated individuals are classified as being above or below the low income or poverty level, using the poverty level index adopted by the Federal Interagency Committee in 1969. This index, in contrast with total family income, reflects the different consumption requirements of families based on their size, composition, sex, age of the family head, and farm-nonfarm residence.

For analysis, two groups of income levels are presented—income below poverty level, a ratio of less than one, and income at and above poverty level, a ratio of one or more. A later, more detailed analysis may show differences not apparent here. There were 723 persons (3.5 percent of the total) examined whose income was

Figure 2. Mean intake of calories and selected nutrients as a percent below recommended

[Based on 1-day diet;

Sex and age	Calories			Protein (gm)		
	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]
White male						
1 year						
2-3 years						
4-5 years						
6-7 years						
8-9 years	x	x	x			
10-11 years	x	xx	x			
12-14 years	xx	xxx	xx			
15-17 years	xx	xx	xx			
18-19 years	x	xx	x			
20-24 years	x	xx	x			
25-34 years	x	xx	x			
35-44 years	x	x	x			
45-54 years	xx	xx	xx			
55-64 years	xx	xxxx	xx		x	
65 years and over	xxx	xxx	xxx		x	
Negro male						
1 year						
2-3 years						
4-5 years						
6-7 years						
8-9 years	xx	xx	xxx			
10-11 years	xxx	xxxx	xx			
12-14 years	xxx	xxxx	xxx			
15-17 years	xxx	xxxx	xxx			
18-19 years	xx	xx	xx			
20-24 years	xx	xxx	xx			
25-34 years	x	xx	x			
35-44 years	xx	xx	xx			
45-54 years	xxx	xxxx	xxx			
55-64 years	xxxx	xxxx	xxx		xx	
65 years and over	xxxx	xxxx	xxxx	xx	xx	xx

[1] Excludes persons with unknown income.

NOTE: There was no one observed below the recommended dietary allowance for thiamine and riboflavin.

unknown. These persons were excluded from the two income classification groups, but they were included in the total group.

The mean nutritive content of diets consumed by different age, sex, race, and income groups was compared with the recommended dietary allowances for calories, protein, calcium, iron, vitamins A and C, thiamine, and riboflavin.

Iron, on the basis of mean intakes, was the nutrient most often found below the recommended dietary allowance in population groups. This was shown in nearly all age groups for white and Negro females in both income groups. Children of ages 1-3 years had means that were 41 to 68 percent below the recommended dietary allowance; adolescents 12-17 years had means that were 35 to 55 percent below the recommended allowance; and women of child-

dietary allowance for males, by income level, race, and age: United States, 1971-74.

24-hour recall]

Calcium (mg)			Iron (mg)			Vitamin A (I.U.)			Vitamin C (mg)		
All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]
			xxxx xxxx x	xxxx xxxx x	xxxx xxxx x						
			x x x	x xxx xx	x x x						
										xx	
							x			xx x	
			xxxx xxxx x	xxxx xxxx xx	xxxx xx						
			x	x x							
			x xxx xx	x xxxx x	x xxx xxx			x			

KEY

x = Below by 1-10 percent
xx = Below by 11-20 percent
xxx = Below by 21-29 percent
xxxx = Below by 30 percent or more

bearing ages, 18-44 years, had means that were 41 to 53 percent below the recommended allowance.

White females aged 65 years and over in the upper income group approached the recommended allowance (96 percent of the recommended allowance), but white females in the lower income group and Negro females in both income groups had means ranging from 16 to 26 percent below the recommended allowance.

White and Negro males in most age groups for both income levels had iron intakes that either approached or were above the recommended allowance. The exceptions were boys aged 1-3 years who had means consistently below the recommended allowances for all race and income groups, 41 to 56 percent. White male youths 15-19 years in the lower income group had means that averaged 17 percent below the recommended allowance. Negro boys 4-5 years in the lower income group had means 13 percent below the recommended allowance. Ne-

Figure 3. Mean intake of calories and selected nutrients as a percent below recommended

[Based on 1-day diet;

Sex and age	Calories			Protein (gm)		
	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]
White female						
1 year						
2-3 years						
4-5 years						
6-7 years	x		x			
8-9 years	xxx	xx	xxx			
10-11 years	x	x	x			
12-14 years	xxx	xxx	xxx			
15-17 years	xxxx	xxxx	xxxx	x	xx	
18-19 years	xx	xxx	xx		x	
20-24 years	xxx	xxx	xxx		x	
25-34 years	xx	xx	xx			
35-44 years	xx	xxx	xx		x	
45-54 years	xx	xx	xx		x	
55-64 years	xx	xxx	xx		xx	
65 years and over	xxx	xxx	xxx	x	xx	x
Negro female						
1 year						
2-3 years						
4-5 years						
6-7 years	x	xx	x			
8-9 years	xxxx	xxx	xxxx			
10-11 years	xxx	xxx	xx			
12-14 years	xxx	xxx	xxx			
15-17 years	xxx	xxxx	xxx	x	x	
18-19 years	xx	xx	xxx			
20-24 years	xxx	xxx	xxx		x	
25-34 years	xx	xx	xxx	x	x	x
35-44 years	xxx	xxx	xxxx	xx	xx	xx
45-54 years	xxx	xxx	xxx	x	x	x
55-64 years	xxx	xxxx	xxx	xx	xxx	xx
65 years and over	xxxx	xxxx	xxx	xx	xx	xx

[1] Excludes persons with unknown income.

NOTE: There was no one observed below the recommended dietary allowance for thiamine and riboflavin.

gro male youths 15-17 years in the lower income group had means 30 percent below the recommended allowance, and those 15-19 years in upper income groups had means that averaged 26 percent below the recommended allowance.

Higher density iron food sources are needed, especially by women, if the recommended dietary allowances for iron are to be attained. The desirability of meeting these recommended dietary allowances cannot, however, be determined from data presented in this report, but must depend upon finding physiological and health related evidence of inadequate iron nutrition in the population. The second Health and Nutrition Examination Survey (HANES II), now in operation, will provide some additional data relevant to making such a determination.

White boys 1-9 years in both income groups had mean caloric intakes that approached or exceeded the recommended dietary allowances. This was also true for white girls and Negro boys 1-7 years. For Negro girls, however, the corre-

dietary allowance for females, by income level, race, and age: United States, 1971-74.

24-hour recall

Calcium (mg)			Iron (mg)			Vitamin A (I.U.)			Vitamin C (mg)		
All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]	All incomes	Below poverty level[1]	Above poverty level[1]
			xxxx	xxxx	xxxx					x	
			xxxx	xxxx	xxxx						
			xx	xx	xx						
			x	xx	x						
			x		x						
			xxxx	xxxx	xxxx						
			xxxx	xxxx	xxxx						
			xxxx	xxxx	xxxx		x				
			xxxx	xxxx	xxxx						
			xxxx	xxxx	xxxx		xx				
			xxxx	xxxx	xxxx		x				
	x		xxxx	xxxx	xxxx		x				
			xxxx	xxxx	xxxx						
x		x		xx	x						
x	x	x	x	xx	x						
			xxxx	xxxx	xxxx						
			xxxx	xxxx	xxxx						
			xx	x	xx						
			x	x	x						
			xx	x	xxx						
			xxxx	xxxx	xxxx						
			xxxx	xxxx	xxxx				xx		
	x		xxxx	xxxx	xxxx	x	xxx				
x		xxx	xxxx	xxxx	xxxx						
xx	xx	xx	xxxx	xxxx	xxxx						
xxxx	xxx	xxxx	xxxx	xxxx	xxxx						
xxxx	xxxx	xxx	xxxx	xxxx	xxxx						
xxxx	xxx	xxxx	xxxx	xxxx	xxxx						
xxx	xxxx	xxx	xx	xxx	xx						
xxx	xxx	xxx	xxx	xxx	xx						

KEY

x = Below by 1-10 percent
xx = Below by 11-20 percent
xxx = Below by 21-29 percent
xxxx = Below by 30 percent or more

sponding pattern was evident only at ages 1-5 years for those in the lower income group and at ages 1-7 years for those in the upper income group.

White boys and men 10 through 74 years in the lower income group generally had mean caloric intakes below the recommended dietary allowances. In the upper income group, this observation was evident only at ages 12-17 and 45-74 years. For those in the upper income group at ages 10-11 and 18-44, the mean caloric intake approached the standards.

Negro males and white and Negro females at all ages from 8 through 74 years and in both income groups had mean caloric intakes below the standards.

The distribution of the mean caloric intake as a percent of the recommended dietary allowances in population subgroups does not correspond to the distribution of the lean and obese persons across similar population subgroups. Various possible explanations for this discrepancy range from reporting biases in the 24-hour recall method of dietary interview to differences in physical activity that are not reflected in the recommended dietary allowances or to the allowances themselves. The National Center for Health Statistics is presently collecting data for the purpose of examining the caloric-exercise-obesity relationship.

Mean protein intake for white boys and men approached or exceeded the recommended dietary allowances for all income groups. Negro boys and men 1-54 years in both income groups also had high protein in relation to the recommended dietary allowances, but at ages 55-64 years men in the lower income group and those 65 years and over in both income groups had mean protein intakes that averaged about 13 percent below the recommended dietary allowances.

Mean protein intake for white girls and women in the income group above poverty level approached or exceeded the recommended dietary allowances at all ages. Corresponding values for white girls and women in the lower income group were similar except for those aged 15-17 and 55 years and over whose mean values averaged about 16 percent below the recommended dietary allowances.

Table B. Weighted average thresholds at the low income level in 1971, by farm-nonfarm residence, sex of family head, and size of family: United States, 1971

Size of family	Total	Nonfarm			Farm		
		Total	Male head[1]	Female head[1]	Total	Male head[1]	Female head[1]
All unrelated individuals	$2,033	$2,040	$2,136	$1,978	$1,727	$1,783	$1,669
Under 65 years	2,093	2,098	2,181	2,017	1,805	1,853	1,715
65 years and over	1,931	1,940	1,959	1,934	1,652	1,666	1,643
All families	3,700	3,724	3,764	3,428	3,235	3,242	3,079
2 persons	2,612	2,633	2,641	2,581	2,219	2,224	2,130
Head under 65 years	2,699	2,716	2,731	2,635	2,317	2,322	2,195
Head 65 years and over	2,424	2,448	2,450	2,437	2,082	2,081	2,089
3 persons	3,207	3,229	3,246	3,127	2,745	2,749	2,627
4 persons	4,113	4,137	4,139	4,116	3,527	3,528	3,513
5 persons	4,845	4,880	4,884	4,837	4,159	4,159	4,148
6 persons	5,441	5,489	5,492	5,460	4,688	4,689	4,656
7 persons or more	6,678	6,751	6,771	6,583	5,736	5,749	5,516

[1] For unrelated individuals, sex of the individual.

Source: U.S. Bureau of the Census: Characteristics of the low-income population, 1971, *Current Population Reports*, Series P-60, No. 86. U.S. Government Printing Office, Washington, 1972.

Negro girls and women also had average protein intakes above the recommended dietary allowances in both income groups except for those women aged 35-44 and 55 years and over in both income groups whose values averaged about 16 percent below the recommended dietary allowances.

Other nutrients examined showed even less evidence of any inadequacy in the general diet.

White and Negro males and white females of all ages (1-74 years) and in both income groups had mean calcium intakes that approached or were above the recommended dietary allowances. Only Negro females at ages 20-74 years in the lower income group and at ages 18-74 years in the upper income group had calcium intakes that ranged from 12 to 39 percent, on the average, below the recommended dietary allowances.

Males had mean vitamin A intakes at all ages in both race and income groups that approached or exceeded the recommended allowances. This was also true for females in almost all age, race, and income groups. The exceptions were white females 20-24 years in the lower income group whose means were 12 percent below the recommended allowances, and Negro females 12-14 years in the upper income group and those 15-17 years in the lower income group whose means were 15 and 27 percent, respectively, below the recommended allowances.

Mean nutrient intakes of thiamine and riboflavin were above the recommended allowances for all age, race, sex, and income groups. Mean nutrients for vitamin C intakes were above the recommended allowances for all age, race, sex, and income groups, except for white males 25-34 and 45-54 years in the lower income group whose intakes averaged 15 percent below the recommended allowances.

CONCLUSION AND SUMMARY

The mean percent of dietary intake relative to recommended dietary allowances has been presented for calories, protein, calcium, iron, vitamins A and C, thiamine, and riboflavin. These data, however, did not consider the distribution of nutrient intakes because only the mean was presented. The mean intake has limited value in light of the variability of some nutrient distributions. High mean intakes can mask the fact that a substantial proportion of individuals within a group may have usual nutrient intakes far below the recommended dietary allowances. However, this habitual intake of individuals cannot be estimated from knowledge of a single-day's intake as collected in HANES I.[7] Single-day intake data, in contrast with intake data over larger periods of time, result in greater variability of nutrient intakes that leads to a higher prevalence of low intake when compared with the recommended dietary allowances, thus overestimating the prevalence of habitual low nutrient intakes.

In spite of the limitations of the single-day intake data to estimate individual habitual intake, the distributions of the means across population subsamples are useful in identifying influences on the diet related to population characteristics. The presentation of dietary intakes relative to the recommended daily allowances of nutrients permits a comparison across age and sex groups, which have different dietary requirements.

Some nutrients, namely riboflavin and thiamine, show adequate or more than adequate mean intake for all population subgroups defined by two levels of poverty, race, sex, and age. Other nutrients, namely protein, calcium, and vitamins A and C revealed some, but not most, population subgroups with lower mean intake than the recommended dietary allowance. Calcium mean intake was consistently lower than recommended allowances only for adult Negro women regardless of income. Vitamin A mean intake was below recommended daily allowance in white adolescents and young adult women in low income groups and among adolescent Negro women regardless of income. Protein mean intake was also below the recommended allowances for adolescents, adult women, and older men in the low income group. This pattern was also observed for adult Negro females and Negro older men and for older white females in the upper income group.

The mean dietary intakes of calories and iron were below the recommended daily allowances for most of the population subgroups. Caloric intake was below the recommended daily allowances for all except the younger child regardless of sex, race, and income group. Iron intake was below the recommended daily allow-

ance for all the female income, race, and age groups and for males in the preschool years and adolescence.

There is such a discrepancy between these patterns of nutrition adequacy of iron and calories as measured by the mean intake relative to recommended daily allowances, as compared with the much smaller extent of inadequacy as measured by physiological measures,[8,9] that one must reserve judgment about the relationships of income, race, sex, and age to malnutrition until these measures are interpreted together.

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Table 1. Mean caloric intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean caloric intake							
1 year	139	125	115	116	126	125	117	126
2-3 years	132	124	126	128	116	119	111	116
4-5 years	124	121	103	120	124	109	104	111
6-7 years	127	112	107	108	104	98	88	91
8-9 years	99	95	87	77	87	78	72	65
10-11 years	87	95	68	82	94	98	78	81
12-14 years	78	84	69	74	75	72	74	76
15-17 years	80	88	66	71	66	69	69	71
18-19 years	81	94	87	82	79	85	89	71
20-24 years	86	97	78	84	78	78	78	79
25-34 years	80	93	87	94	81	83	81	79
35-44 years	98	90	83	85	78	85	74	70
45-54 years	82	85	67	75	89	86	71	72
55-64 years	70	81	57	78	77	81	66	74
65 years and over	71	75	67	64	72	79	68	71

Table 2. Mean protein intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean protein intake							
1 year	256	236	224	224	254	244	217	224
2-3 years	243	228	238	214	232	221	203	225
4-5 years	232	235	195	222	247	214	206	214
6-7 years	293	265	237	249	243	226	197	209
8-9 years	233	216	187	162	214	180	164	142
10-11 years	192	200	135	179	185	172	161	154
12-14 years	156	164	127	135	126	119	110	125
15-17 years	142	159	120	123	85	101	93	101
18-19 years	147	161	138	122	99	119	124	106
20-24 years	124	148	122	119	95	105	92	106
25-34 years	137	142	149	142	100	107	94	97
35-44 years	154	134	110	134	97	104	88	87
45-54 years	113	126	114	122	98	109	95	91
55-64 years	92	116	87	115	85	100	73	87
65 years and over	92	103	88	85	83	92	85	85

Table 3. Mean calcium intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean calcium intake							
1 year	234	213	174	160	252	207	134	182
2-3 years	218	196	160	159	181	199	152	162
4-5 years	207	234	152	206	214	204	157	166
6-7 years	219	260	204	242	248	234	163	172
8-9 years	238	276	205	194	243	132	155	164
10-11 years	189	192	115	158	135	183	119	124
12-14 years	181	211	120	140	144	156	118	108
15-17 years	250	239	139	144	109	139	99	114
18-19 years	209	242	148	164	119	143	112	79
20-24 years	238	294	247	162	106	116	88	85
25-34 years	210	276	157	198	100	113	74	69
35-44 years	331	228	146	194	99	104	66	72
45-54 years	207	217	161	145	104	102	74	61
55-64 years	204	198	134	160	102	98	68	76
65 years and over	155	188	140	135	91	98	78	72

Table 4. Mean iron intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean iron intake							
1 year	49	51	44	59	32	51	43	46
2-3 years	53	56	58	52	49	47	45	58
4-5 years	92	95	87	97	86	82	93	89
6-7 years	124	112	94	105	89	97	90	98
8-9 years	116	112	107	111	111	98	98	74
10-11 years	130	128	94	133	66	57	61	59
12-14 years	95	97	105	90	65	56	56	61
15-17 years	78	95	70	77	45	53	49	59
18-19 years	88	94	95	71	51	58	57	51
20-24 years	143	171	132	140	52	56	54	59
25-34 years	174	168	174	159	53	58	54	53
35-44 years	174	160	136	149	52	59	47	49
45-54 years	129	148	123	133	54	59	48	50
55-64 years	111	140	108	139	86	99	75	84
65 years and over	113	125	112	104	81	96	74	84

Table 5. Mean vitamin A intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean vitamin A intake							
1 year	276	187	179	138	138	175	181	266
2-3 years	190	179	213	154	144	147	195	464
4-5 years	196	186	198	239	187	178	171	160
6-7 years	174	164	203	243	145	141	176	153
8-9 years	183	191	139	194	258	153	138	108
10-11 years	167	211	151	196	184	165	138	129
12-14 years	161	157	170	112	126	167	129	85
15-17 years	133	178	101	97	95	108	73	108
18-19 years	109	174	105	106	94	117	139	126
20-24 years	113	148	215	159	88	106	134	103
25-34 years	148	151	149	158	96	127	121	104
35-44 years	195	149	126	166	98	121	100	133
45-54 years	121	148	167	158	260	150	142	141
55-64 years	109	165	257	197	136	180	164	170
65 years and over	97	167	167	170	125	157	128	160

Table 6. Mean vitamin C intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean vitamin C intake							
1 year	109	191	163	148	97	161	139	242
2-3 years	195	220	177	147	167	189	152	154
4-5 years	173	226	194	199	153	198	220	238
6-7 years	158	214	203	260	166	203	190	227
8-9 years	183	200	165	211	275	207	223	123
10-11 years	133	232	118	180	178	213	215	208
12-14 years	163	200	175	247	126	176	170	194
15-17 years	156	203	190	130	149	147	127	142
18-19 years	170	228	151	106	181	192	164	136
20-24 years	147	185	138	185	151	155	138	140
25-34 years	88	155	107	139	107	140	123	139
35-44 years	115	139	164	150	111	150	127	135
45-54 years	82	143	156	129	107	155	106	118
55-64 years	112	163	122	203	124	182	123	199
65 years and over	95	158	148	128	130	174	132	167

Table 7. Mean thiamine intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean thiamine intake							
1 year	158	175	173	193	163	198	163	205
2-3 years	168	173	195	163	175	173	163	188
4-5 years	168	165	193	208	163	163	180	188
6-7 years	165	163	165	163	150	163	168	163
8-9 years	145	152	152	170	180	163	168	165
10-11 years	175	163	165	163	167	150	175	173
12-14 years	170	150	165	163	170	158	160	165
15-17 years	152	152	158	143	135	158	152	198
18-19 years	147	145	163	140	167	157	150	163
20-24 years	155	145	152	145	160	160	172	170
25-34 years	163	156	162	150	160	163	167	155
35-44 years	157	147	165	147	163	163	157	165
45-54 years	145	155	172	172	147	170	198	170
55-64 years	160	165	177	163	172	180	167	177
65 years and over	167	172	182	172	180	185	190	170

Table 8. Mean riboflavin intake as a percent of recommended dietary allowance, by race, sex, and age for income levels: United States, 1971-74 (HANES I)

Age	White male		Negro male		White female		Negro female	
	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level	Income below poverty level	Income above poverty level
	Mean riboflavin intake							
1 year	256	242	233	222	293	260	200	247
2-3 years	215	207	193	175	218	215	211	180
4-5 years	185	200	173	218	198	205	176	180
6-7 years	169	202	196	189	198	196	173	167
8-9 years	181	202	162	175	202	195	156	173
10-11 years	196	195	164	167	167	193	164	160
12-14 years	184	187	189	145	178	187	165	142
15-17 years	185	175	149	142	158	181	142	185
18-19 years	173	169	129	145	149	173	140	149
20-24 years	167	158	169	132	158	167	156	136
25-34 years	162	160	145	140	162	175	149	134
35-44 years	181	158	129	153	178	167	142	163
45-54 years	162	163	154	156	222	178	193	158
55-64 years	180	173	205	154	191	196	153	171
65 years and over	169	178	158	200	194	196	176	165

TECHNICAL NOTES

The sampling plan for the 65 preselected examination locations in the Health and Nutrition Examination Survey (HANES) followed a highly stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the conterminous United States 1-74 years of age was selected. Successive elements dealt with in the process of sampling were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and finally, sample person. The sampling design provided for oversampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The caloric and selected nutrient intake values are shown as population estimates, that is, the dietary intake findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and poststratified ratio adjustments were also made, so that the final sampling estimates of the population size agree exactly with the independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

Previous issues of *Advance Data From Vital and Health Statistics*

No. 1. Blood Pressure of Persons 6-74 Years of Age in the United States (Issued: October 18, 1976)

No. 2. Hypertension: United States, 1974 (Issued: November 8, 1976)

No. 3. Height and Weight of Adults 18-74 Years in the United States (Issued: November 19, 1976)

No. 4. Prevalence of Dermatological Diseases Among Persons 1-74 Years of Age, United States (Issued: January 26, 1977)

No. 5. A Comparison of Levels of Serum Cholesterol of Adults 18-74 Years of Age in the United States in 1960-62 and 1971-74

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 7 May 25, 1977 | Public Health Service • Health Resources Administration

Total Serum Cholesterol Level of Adults 18-74 Years of Age, United States, 1971-74[a]

The serum cholesterol level in this report were obtained as a part of the Health and Nutrition Examination Survey (HANES). HANES is a program of the National Center for Health Statistics in which measures of nutritional status are collected for a scientifically designed sample representative of the civilian, noninstitutionalized population of the United States in a broad range of ages, 1-74 years.[1]

Field data collection operations for the first HANES survey were started in April 1971 and completed in June 1974. Of the 28,043 persons aged 1-74 years who were selected in the national probability sample to represent the 194 million persons in that age group in the civilian noninstitutionalized population, 20,749, or 74 percent, were examined. When adjustments were made for the differential sampling ratios used for the effect of oversampling among the poor, preschool children, women of childbearing age, and the elderly, this corresponds to an effective response rate of 75 percent. There were 13,645 people ages 18-74 years on whom serum cholesterol level determinations were made. Selected from the national probability sample of 19,572, these individuals represented the 128 million of that age group in the population. This is an unadjusted response rate of 70 percent and an effective adjusted response rate of 70 percent. Detailed estimates of the distribution of serum cholesterol levels will be described and analyzed in a forthcoming report in Series 11[2] of *Vital and Health Statistics*. Selected data and findings from that report are presented in tables 1-5 and figures 1-3 of this *Advance Data*.

Serum cholesterol levels have been identified as one of the important multiple risk factors in the development of coronary heart disease. The results of epidemiologic studies based on adult data from longitudinal studies such as the Framingham Heart Study[3] have demonstrated that persons with elevated serum cholesterol values developed coronary heart disease with greater frequency. Serum cholesterol levels of adults aged 18-74 years are presented and analyzed by age, sex, and race because of medical interest in such data. HANES provided cross-sectional data of serum cholesterol levels obtained on different age cohorts representative of the U.S. population. The age trends represented mean levels for successive cohorts of different age groups. The limitation of cross-sectional data are recognized in considering group age changes because they reflect effects of environmental as well as developmental and heredity influences.

All serum cholesterol determinations for HANES were made in the Lipid Standardization Laboratory of the Center for Disease Control (CDC), Public Health Service, Atlanta, Georgia. The analytical method was based on that of Abell et al.,[4], but was modified for a semiautomated production line. The method, described in detail by Eavenson et al.[5] was made possible by the development of a relatively stable Liebermann color reagent and was designed for automatic pipetting units.

The Lipid Laboratory compared the results obtained with this semiautomated method with those obtained from their standardized version.[4] To examine the bias of the semiautomated

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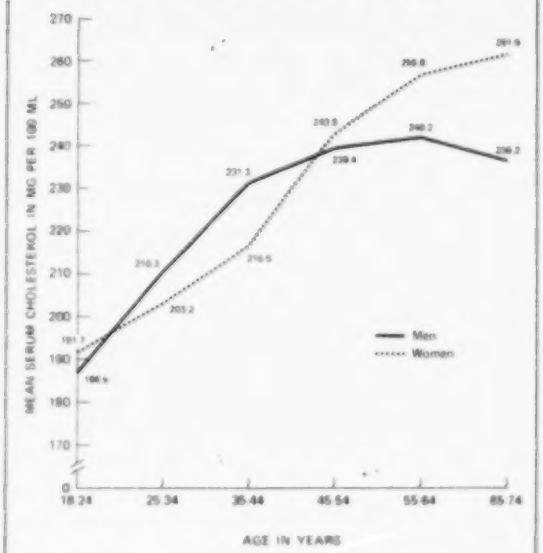
[a]This report prepared by Sidney Abraham, Clifford L. Johnson, and Margaret D. Carrol.

method, data were obtained from pools of sera analyzed by the reference method and by the semiautomated method. In 1972, pools ranging from 134 to 343 mg per 100 ml had an average positive bias of 4.07 percent for the semiautomated method as compared to the standard method; for the 1973-74 period, the corresponding figure was a positive bias of 4.9 percent. The weighted average bias was 4.5 percent. The 1971-1974 data in this report are presented without correction for bias so that they provide population reference standards for determinations made by the semiautomated methodology now in use. However, in the series report, HANES' 1971-1974 serum cholesterol data are corrected for bias when HANES data are compared with Health Examination Survey data of 1960-1962.

Figure 1. MEAN SERUM CHOLESTEROL LEVELS OF ADULTS BY SEX AND AGE: UNITED STATES, 1971-74



PRINCIPAL FINDINGS

For men, the lowest mean serum cholesterol level occurs in the youngest age group measured, 18-24 years. However, the mean level increases steadily with age until the age group 35-44 years. Then it increases by a small increment to a maximum level of 240.2 mg per 100 ml at the age group 55-64 years, declining slightly to a mean level of 236.2 mg per 100 ml at the oldest age group measured, 65-74 years (table 1, figure 1).

For women, the mean serum cholesterol levels do not parallel those of men in the same

Table 1. Serum cholesterol level of adults 18-74 years by sex and age with mean, standard deviation, and standard error of the mean: United States, 1971-74

Age	Both sexes			Men			Women		
	Mean[1]	Standard deviation	Standard error of the mean	Mean[1]	Standard deviation	Standard error of the mean	Mean[1]	Standard deviation	Standard error of the mean
All ages 18-74 years	223.4	51.5	0.80	221.8	49.9	1.09	224.9	52.8	0.99
18-24 years	189.4	39.0	1.41	186.9	36.7	1.89	191.7	41.0	1.92
25-34 years	206.6	43.2	1.42	210.3	44.0	2.27	203.2	42.2	1.39
35-44 years	223.6	45.3	1.50	231.3	45.9	2.53	216.5	43.5	1.37
45-54 years	241.1	49.7	1.48	239.4	47.0	2.54	242.6	52.0	2.36
55-64 years	248.9	50.3	2.48	240.2	51.2	3.17	256.8	48.2	2.72
65-74 years	250.7	54.2	1.35	236.2	53.8	2.05	261.6	51.9	1.92

[1] Mg per 100 ml.

age groups. The serum cholesterol levels are slightly higher for women than for men in the age group 18-24 years. However, in the older age groups, there is a slight but consistently higher mean serum cholesterol level for men as compared with that for women until the age group 45-54 years. Thereafter the mean levels for men show a plateau effect and a slight decrease, while the mean levels for women continue upward to 256.8 mg per 100 ml at age 55-64 years and to a maximum value of 261.6 mg per 100 ml at the age group 65-74 years (table 1, figure 1).

The standard deviations of the distributions by age and sex are shown in table 1. The variability within each age and sex group increases with age as indicated by the standard deviations. Although the differences are small, men show greater variations around their mean levels at most age groups than women do. The percent distribution of men and women 18-74 years of age falling into each of the 16 groups according to their levels of cholesterol are shown in tables 2 and 3.

Mean serum cholesterol levels for white men are consistently higher than those for Negro men at ages 18-24, 35-44, and 45-54. The differences in mean levels range from 2.3 to 6.8 mg per 100 ml. The same direction is not evident at ages 25-34 and ages 55 years and older, when Negro men have higher mean serum cholesterol levels than those of white men. However, the differences in mean levels are small and range from 1.0 to 4.3 mg per 100 ml (table 4 and figure 2).

The mean serum cholesterol level for white and Negro men generally increases with age. The mean level for white men increases rapidly to the age group 35-44 years. The mean level then continues upward at a slower rate of increase, reaching a peak of 239.9 mg per 100 ml at ages 45-64 years, and declines slightly thereafter. The mean levels for Negro men also increase with age but at a slower rate; they are slightly higher at the older ages and peak at a later age—55-64 years—than those for white men. A slight decline in mean level also occurs in the age group 65-74 years.

Table 4 and figure 3 show that mean serum cholesterol levels for Negro women are consistently higher than those of white women in the age groups under age 65 years. In the oldest age group measured, 65-74 years, the mean levels for white women are slightly higher than those for Negro women, a difference of 2.1 mg per 100 ml. The mean levels for Negro and white women

Table 2. Percent distribution of serum cholesterol levels of men by age: United States, 1971-74

Serum cholesterol level (mg per 100 ml)	All ages 18-74 years	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years
	Percent distribution						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 100	0.1	0.1	-	-	0.4	0.1	0.2
100-119	0.4	1.0	0.3	0.1	0.3	0.0	0.3
120-139	2.1	5.6	2.8	0.8	0.3	1.3	1.2
140-159	5.6	16.4	5.3	2.3	3.0	1.1	2.8
160-179	11.5	23.5	15.4	9.1	5.4	4.4	5.9
180-199	15.6	23.1	20.6	12.9	8.3	13.6	12.3
200-219	16.2	13.4	19.9	18.1	16.4	12.8	17.3
220-239	16.0	7.4	13.9	17.2	20.1	23.2	16.0
240-259	12.0	5.5	9.8	14.3	15.7	13.8	14.8
260-279	8.8	2.0	5.6	11.7	11.3	12.7	12.7
280-299	4.6	0.8	3.4	4.8	7.3	6.2	7.1
300-319	3.3	1.0	0.9	3.3	6.5	5.3	4.3
320-339	1.7	0.0	0.8	3.7	1.6	2.2	2.4
340-359	1.1	0.2	0.3	1.1	2.9	1.2	0.8
360-379	0.3	-	0.4	0.0	0.2	0.9	0.9
380 or more	0.6	-	0.6	0.6	0.3	1.2	1.0

NOTE: Percents may not add to 100.0 due to rounding.

Figure 2. MEAN SERUM CHOLESTEROL LEVELS OF MEN BY AGE AND RACE: UNITED STATES, 1971-74

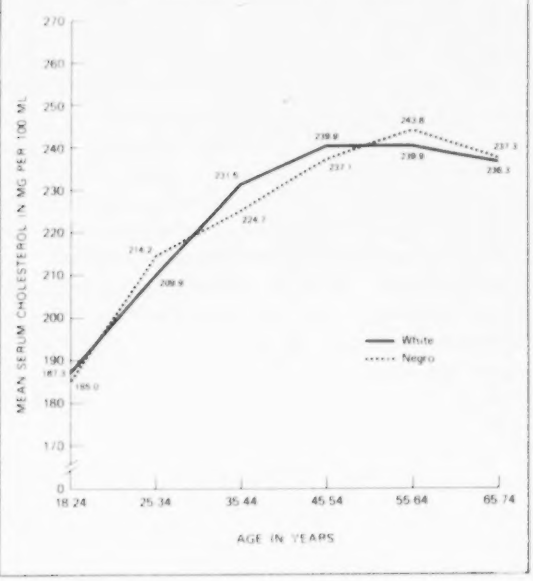


Figure 3. MEAN SERUM CHOLESTEROL LEVELS OF WOMEN BY AGE AND RACE: UNITED STATES, 1971-74

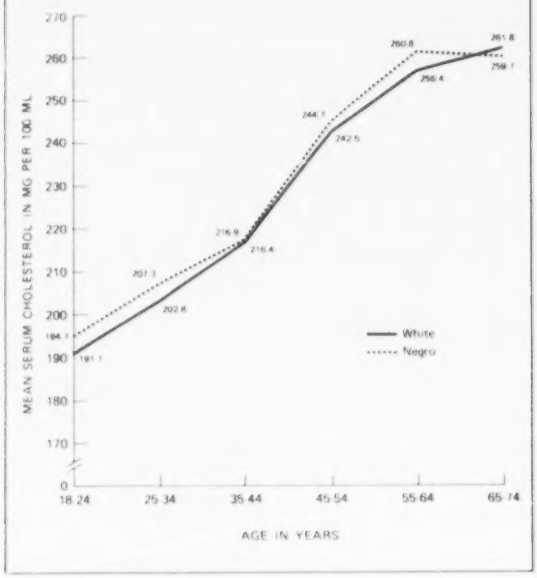


Table 3. Percent distribution of serum cholesterol levels of women by age: United States, 1971-74

Serum cholesterol level (mg per 100 ml)	All ages 18-74 years	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years
	Percent distribution						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 100	0.1	0.3	0.3	0.1	-	-	-
100-119	0.4	1.2	0.6	0.3	0.1	0.1	0.4
120-139	2.2	6.1	3.1	1.3	0.6	0.2	0.8
140-159	5.8	13.6	8.1	4.9	2.6	1.0	1.6
160-179	10.6	21.1	16.2	11.0	5.0	2.6	2.0
180-199	15.2	19.6	21.8	19.0	11.7	7.4	5.1
200-219	16.2	14.9	20.6	21.5	15.4	11.8	9.1
220-239	14.6	11.9	12.2	16.4	18.5	14.8	14.3
240-259	11.7	5.7	8.0	11.8	14.4	16.2	17.7
260-279	9.1	3.2	5.4	6.3	12.0	16.8	14.7
280-299	5.6	0.9	1.6	3.2	8.1	10.8	13.6
300-319	3.8	0.9	1.0	2.5	3.9	8.9	9.0
320-339	2.2	0.4	0.4	1.0	3.3	4.4	5.4
340-359	1.0	0.0	0.3	0.3	1.2	2.0	3.0
360-379	0.8	-	0.1	0.1	1.7	1.9	1.8
380 or more	0.7	0.2	0.3	0.3	1.5	1.1	1.5

NOTE: Percents may not add to 100.0 due to rounding.

increase with age to 55-64 years. Then the mean level for Negro women declines slightly while it continues to rise less rapidly for white women although it slightly exceeds the Negro women's level.

Age not only affects the comparison of mean serum cholesterol levels between races but also the comparison levels between sexes. For example, the mean levels of white and Negro men in the youngest age group measured, 18-24 years, are slightly lower than the mean levels for women of both races at the same age (table 4). Although a crossover occurs in the midthirties, the pattern reverses again after age 45, when the mean levels for women are higher and increase more rapidly than those for men, particularly after age 55.

The distribution of serum cholesterol levels was also used to note the proportion of persons in any race-sex-age group that exceeds the level of 260 mg per 100 ml and more. These measurements were used to estimate the prevalence of elevated serum cholesterol levels. Although there is no statistical information regarding the actual level of serum cholesterol separating "high" from "low" risk individuals, the level of 260 mg per 100 ml has been cited in studies to distinguish "high" from "less high" or "low".

Among men, proportions varied from a low of 4.0 percent in age group 18-24 years to a high of 30.1 percent in age group 45-54 years. The level then declines to about 29 percent at ages 55 and older (table 5).

Among women, the lowest proportion also occurs at the youngest age group measured—18-24 years—with the proportion increasing steadily with age until it reaches a maximum of 49.2 percent at the age group 65-74 years.

At the youngest age group measured, 18-24 years, and at the ages of 45 years and older, there are higher proportions of women with serum cholesterol levels of 260 mg per 100 ml and more than there are of men. This pattern is not evident for age groups 25-34 and 35-44 years when the proportions are higher for males than for females. In the age groups 18-24 and 45-54 years, the differences in proportions between the sexes are small—slightly more than 1.5 percent. These differences are much larger in the ages 55 years and older. Elevated serum cholesterol levels increase with age for women but show a slight decrease for men at ages 55 years and over.

There are higher proportions of white and Negro women with serum cholesterol levels of 260 mg per 100 ml and more than there are of

Table 4. Serum cholesterol levels of adults 18-74 years by race, sex, and age with mean, standard deviation, and standard error of the mean: United States, 1971-74

Age	White						Negro					
	Men			Women			Men			Women		
	Mean[1]	Standard deviation	Standard error of the mean	Mean[1]	Standard deviation	Standard error of the mean	Mean[1]	Standard deviation	Standard error of the mean	Mean[1]	Standard deviation	Standard error of the mean
All ages 18-74 years.....	222.2	49.7	1.09	225.1	53.0	1.02	218.9	52.7	3.41	224.0	50.5	3.78
18-24 years..	187.3	37.2	2.07	191.1	41.1	2.11	185.0	32.5	3.75	194.7	38.9	3.33
25-34 years..	209.9	42.4	2.38	202.8	42.4	1.47	214.2	57.0	9.26	207.3	40.7	3.42
35-44 years..	231.5	45.5	2.49	216.4	42.8	1.56	224.7	51.7	8.56	216.9	42.2	3.25
45-54 years..	239.9	47.4	2.61	242.5	52.5	2.49	237.1	42.2	5.61	244.7	46.5	6.49
55-64 years..	239.9	50.6	3.41	256.4	47.8	2.89	243.8	58.8	11.65	260.8	52.6	5.68
65-74 years..	236.3	54.3	2.40	261.8	52.3	2.02	237.3	48.4	3.40	259.7	47.7	3.78

[1] Mg per 100 ml.

men in ages 18-24 and 45 years and older (table 5). This pattern is reversed for the age groups 25-34 and 35-44 years, when the proportions are higher for white and Negro men than for women of both races. In the age group 45-54 years, the differences in proportions between white men and women are 0.6 percent while the differences between Negro men and women are 11.8 percent. The differences are larger in the ages 55 years and older, particularly for white men as compared to white women, 16.8 and 20.5 percent, respectively.

The proportion of white men and women with serum cholesterol levels of 260 mg per 100 ml and more in the youngest age group measured, 18-24 years, are consistently higher than those of their Negro counterparts (table 5). However, the pattern is reversed for the age group 25-44 years, when the proportions of serum cholesterol levels for Negro men and

Table 5. Prevalence rates for serum cholesterol levels of 260 or more among adults 18-74 years by race, sex, and age with standard errors: United States, 1971-74

Sex and age	Rate per 100 persons[1]	Population estimate in thousands	Standard error of rate	Prevalence rate for serum cholesterol levels of 260 or more[1]		Standard error of prevalence rate for serum cholesterol levels of 260 or more[1]	
				White	Negro	White	Negro
Both sexes				Rate per 100 persons			
All ages 18-74 years	21.9	27,974	0.58	22.1	20.4	0.60	1.30
18-24 years	4.8	1,134	0.54	4.9	4.0	0.62	0.82
25-34 years	10.5	2,812	0.84	10.3	12.5	0.84	3.50
35-44 years	19.3	4,353	1.22	19.2	18.4	1.18	3.43
45-54 years	31.0	7,289	1.61	31.2	30.2	1.69	4.58
55-64 years	38.2	7,203	2.32	38.2	40.3	2.44	4.54
65-74 years	40.6	5,182	1.27	40.9	38.7	1.37	3.32
Men							
All ages 18-74 years	20.4	12,358	0.87	20.6	19.0	0.92	1.87
18-24 years	4.0	451	0.78	4.1	2.5	0.88	1.69
25-34 years	12.1	1,538	1.46	11.7	14.9	1.54	5.10
35-44 years	25.3	2,735	2.13	24.9	25.6	2.03	7.00
45-54 years	30.1	3,392	2.22	30.9	24.2	2.25	5.82
55-64 years	29.7	2,636	2.39	29.4	34.0	2.59	10.20
65-74 years	29.2	1,605	1.38	29.2	30.3	1.57	3.38
Women							
All ages 18-74 years	23.2	15,616	0.79	23.5	21.6	0.83	1.58
18-24 years	5.6	683	0.87	5.6	5.3	1.05	1.48
25-34 years	9.1	1,275	0.97	9.0	10.4	0.98	2.87
35-44 years	13.7	1,618	1.19	13.7	14.1	1.22	2.71
45-54 years	31.8	3,897	2.08	31.5	36.0	2.19	6.81
55-64 years	45.9	4,567	3.04	46.2	44.6	3.19	5.67
65-74 years	49.2	3,577	1.81	49.7	44.9	1.90	4.29

[1] Mg per 100 ml.

women are slightly higher than their white counterparts. Consistent findings are not found in the older age groups. In the age group 45-54 years, white men and Negro women have a higher proportion of elevated serum cholesterol levels than white women and Negro men. In contrast, in the age groups 55-64 and 65-74 years, Negro men and white women have a higher elevated serum cholesterol level than white men and Negro women.

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TECHNICAL NOTES

The sampling plan for the 65 pre-selected examination locations in the Health and Nutrition Examination Survey (HANES) followed a highly stratified multi-stage probability design in which a sample of the civilian, noninstitutionalized population of the conterminous United States, 1-74 years of age, was selected. Successive elements dealt with in the process of sampling were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and sample person. The sampling design provided for over-sampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The serum cholesterol determinations are shown as population estimates, that is, the serum cholesterol findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. Adjustments were made for persons in the sample who were not examined and for post-stratified ratio. Adjustments were also made so that the final sampling estimates of the population size were brought into closer alignment with the U.S. Bureau of the Census independent estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

SYMBOLS

Data not available	...
Category not applicable	...
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 8 July 11, 1977 | Public Health Service • Health Resources Administration

Total Serum Cholesterol Levels of Children 4-17 Years of Age, United States, 1971-74[a]

Serum cholesterol levels of children 4-17 years of age in this report were obtained as part of the Health and Nutrition Examination Survey (HANES). HANES is a program of the National Center for Health Statistics in which measures of nutritional status are collected for a scientifically designed sample representative of the civilian noninstitutionalized population of the United States in the broad range of ages 1-74 years.[1]

Field data collection operations for the first HANES survey were started in April 1971 and completed in June 1974. Of the 28,043 persons aged 1-74 years who were selected in the national probability sample to represent the 194 million persons in that age in the civilian noninstitutionalized population, 20,749, or 74.0 percent, were examined. When adjustments are made for the differential sampling ratios used for the effect of oversampling among the poor, preschool children, women of childbearing age, and the elderly, this figure corresponds to an effective response rate of 75 percent. Among children 4-17 years of age at interview for whom serum cholesterol determinations were made, there were 5,334 examined out of the probability sample of 6,356 selected to represent the 56 million of this age in the population. This is an unadjusted response rate of 84 percent and an effective adjusted response rate of 84 percent.

Detailed estimates of the distribution of serum cholesterol levels will be described and analyzed in the report "Total Serum Cholesterol Levels of Children 4-17 Years, United States, 1971-1974," *Vital and Health Statistics* Series 11.[2] Selected data and findings from that report are presented here in tables 1-5 and figures 1-4.

CHOLESTEROL DETERMINATIONS

All serum cholesterol determinations were made in the Lipid Standardization Laboratory of the Center for Disease Control (CDC), Public Health Service, Atlanta, Georgia. The analytical method was based on that of Abell and others[3] but was modified for a semiautomated production line. The method described in detail by Eavenson and others[4] was made possible by the development of a relatively stable Liebermann color reagent and was designed for automatic pipetting units.

The Lipid Laboratory at CDC compared the results obtained with this semiautomated Abell method and those obtained from their standardized version of Abell and others. For examining the bias of the semiautomated method, data were obtained from pools of sera analyzed by the reference method and the semiautomated method. For pools ranging from 134 to 343 mg per 100 ml, there was in 1972 an average positive bias of 4.07 percent for the semiautomated method as compared to the standard method; for the 1971-1974 period the corresponding figure was a positive bias of 4.9 percent. The weighted average bias was 4.5 percent. In this paper the 1971-1974 data are presented without correction for bias so that they provide population reference standards for determinations made by the semiautomated methodology now in use.

[a]This report prepared by Sidney Abraham, Clifford L. Johnson, M.S.P.H., and Margaret D. Carroll, M.S.P.H.

For serum cholesterol measurements, sufficient numbers are available for presenting children in single years of age, from age 4 to 17. All such ages are presented by sex and race. The number of missing serum cholesterol test values was acceptable for children of ages 4 through 17 years. This was not the case for serum cholesterol values for children of ages 1-3 years, which are nevertheless presented, but were not analyzed because of possible bias due to missing values.

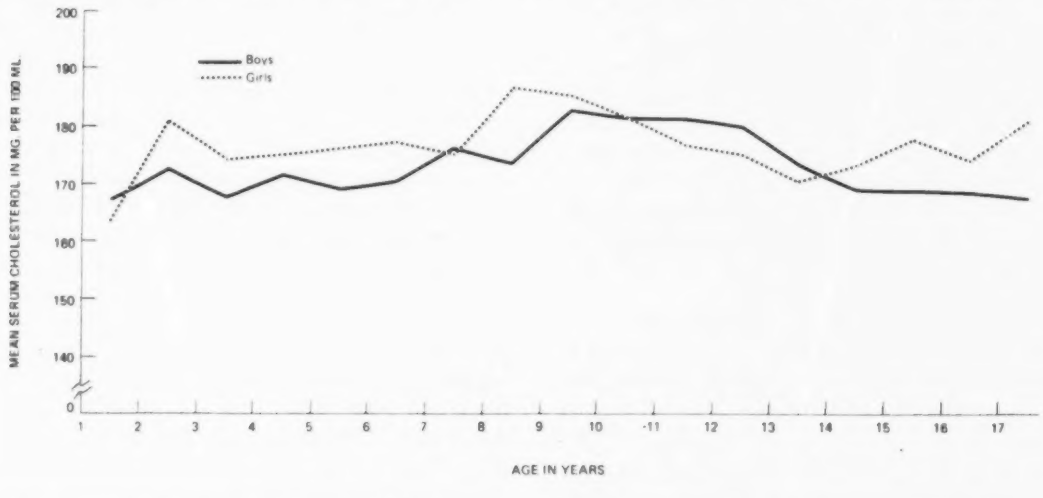
PRINCIPAL FINDINGS

The mean serum cholesterol level of boys in the younger ages from 4 through 11 years tends to increase with age to a high average value of 181.8 mg per 100 ml at ages 9-11 years. Another pattern in mean values is observed from these ages through 17 years, when the mean values consistently declined to a low mean value of 167.5 mg per 100 ml at age 17 years (table 1, figure 1). Table 1 and figure 1 also show that the mean values of girls were relatively stable at ages 4-7 years, ranging from 174.7 to 177.1 mg per 100 ml with the mean values increasing abruptly to 186.5 mg per 100 ml at age 8. From this age on through age 13 years the mean levels consistently decreased from the peak at age 8 to 170.4 mg per 100 ml at age 13 years, a decrease in mean level of 16.1 mg per 100 ml. This direction is not evident at ages 14 through 17 years, when the mean levels increased irregularly each year from 172.8 mg per 100 ml at age 14 years to 180.6 mg per 100 ml at age 17 years.

Overall, the mean serum cholesterol levels for girls increased from 174.7 mg per 100 ml at age 4 years to 180.6 mg per 100 ml at age 17 years, an increase of 5.9 mg per 100 ml. The decrease in mean levels between similar ages for boys is slightly less, 3.8 mg per 100 ml. Girls in each age group except ages 7, 11, 12, and 13 years, had higher mean serum cholesterol levels than boys in the same age group.

The main serum cholesterol patterns observed previously for the total male population aged 4-17 years were similar to those observed

Figure 1. MEAN SERUM CHOLESTEROL LEVELS OF CHILDREN AGED 1-17 YEARS BY AGE AND SEX: UNITED STATES, 1971-74



for white boys separately (table 2, figure 2). Mean cholesterol levels of white boys were highest at 9-11 years and decreased with age. For Negro boys the peaks in values were at ages 7-12 years, with the exception of a drop in mean value at age 10 years, and then a decline in mean value from 184.1 mg per 100 ml at age 12 years to a low of 161.8 mg per 100 ml at age 14 years. From 14 years on the mean levels increased rapidly to 178.7 mg per 100 ml at age 16 and then declined (table 2 figure 2). At every age except ages 10, 13, and 14 years Negro boys had higher mean serum cholesterol values than white boys.

The age-cholesterol pattern found for girls in the total population was generally found for white and Negro girls separately. The mean serum cholesterol values of white girls increased irregularly from an average value of 173.5 mg per 100 ml at ages 4-5 years to the highest mean value of 183.6 mg per 100 ml at ages 8-9 years and then declined to 168.3 mg per 100 ml at age 13 years. Thereafter with age there was a general increase in mean level to 180.5 mg per 100 ml at age 17 years (table 2 and figure 3).

The mean levels of Negro girls also increased irregularly each year from 177.1 mg per 100 ml at age 4 to a peak of 202.8 mg per 100 ml at age 8. From this highest mean level at age 8 there is a decrease in mean values through age 12 and then a general increase to 194.5 mg per 100 ml at age 15. At ages 16 and 17 years the mean cholesterol levels declined from those at age 15 (table 2 and figure 3). At each age, with the exception of ages 6, 11, and 12 years, Negro girls had a higher mean serum cholesterol levels than white girls.

Both white and Negro girls generally had higher mean cholesterol levels than their male counterparts, particularly Negro girls. In addition, Negro boys and girls had generally higher mean serum levels than their white counterparts.

The proportion of children in HANES whose serum cholesterol levels exceeded any specified

Figure 2. MEAN SERUM CHOLESTEROL LEVELS OF BOYS AGED 1-17 YEARS BY AGE AND RACE: UNITED STATES, 1971-74

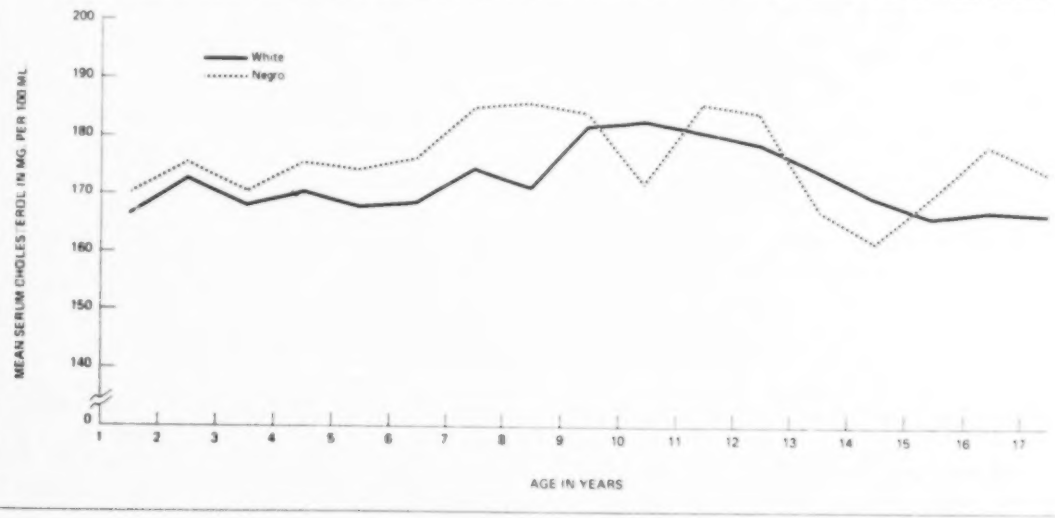
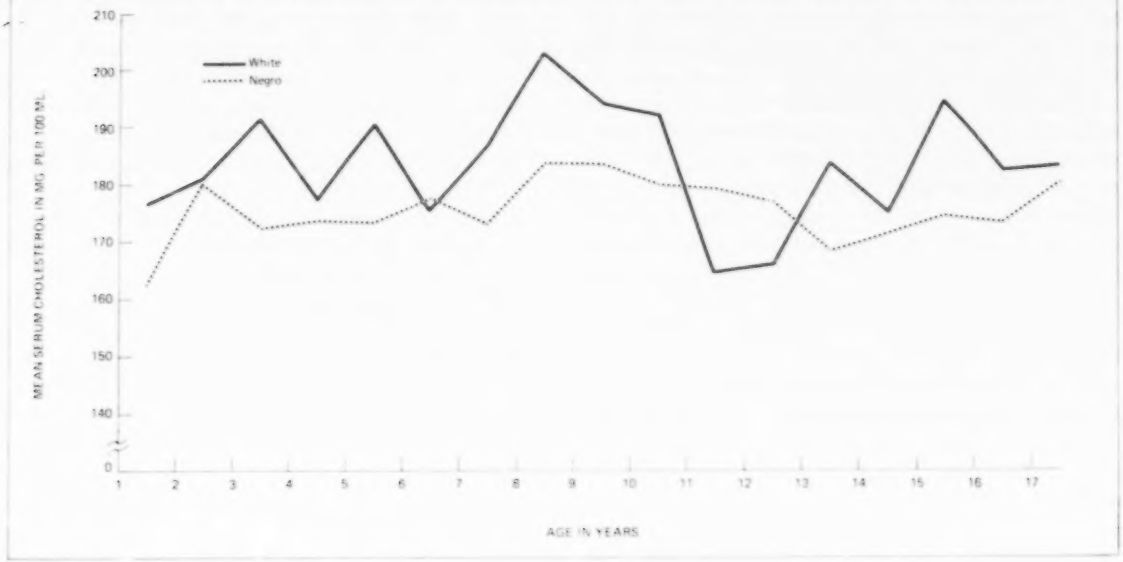


Figure 3. MEAN SERUM CHOLESTEROL LEVELS OF GIRLS AGED 1-17 YEARS BY AGE AND RACE: UNITED STATES, 1971-74



level may be found in table 3 for boys and in table 4 for girls.

The U.S. estimates of serum cholesterol levels of children aged 4-17 can be compared with those reported in HANES for adults of ages 18-74 years. Table 5 shows the mean serum cholesterol levels of children and adults obtained in 1971-1974 by age and sex with the standard deviations of the population distribution. Figure 4 shows the adult mean levels as a continuation of the mean levels of those presented for children of individual ages of 4-17 years.

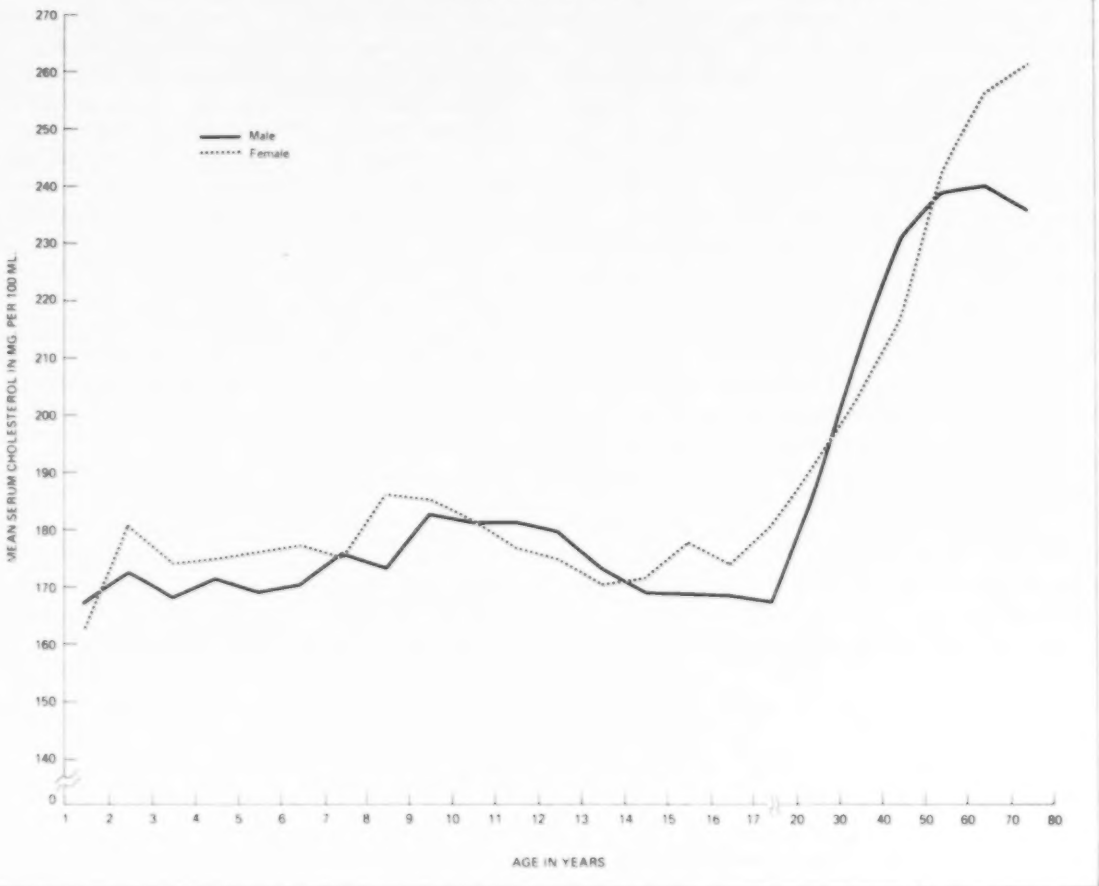
Males show a mean serum level of 167.5 mg per 100 ml at age 17 after a consistent decline from a mean level of 182.5 mg per 100 ml at age 9. The mean levels for adult males in the age group 18-24 is 186.9 mg per 100 ml, an increase of 19.4 mg per 100 ml, or 11.6 percent, from the mean level at age 17. The mean levels for male adults increase rapidly to the age group 35-44 and increase less rapidly in the age groups 45-54 and 55-64 years. A slight decline occurs in the age group 65-74 years.

A similar analysis of the mean level at age 17 for girls with that at ages 18-24 for females also shows a rise in mean levels. The mean level increases to the age group 45-54 years and increases less rapidly in the later age groups. The rise in mean level among men does not start until the early adult ages, 18-24 years, whereas in females the rise begins earlier.

The mean levels for women are higher than those for men in the youngest age group, 18-24 years. The mean levels for women increase less rapidly than those for men in the age groups 25-34 and 35-44 years but increase much more rapidly than men's levels after age 55. The mean levels for women are about the same as those for men in the age group 45-54 years. The mean levels for men peak at ages 55-64 years and then decline, while the mean levels for women continue to rise.

The mean levels in adults are consistently higher than those in children aged 4-17 years. Table 5 shows that the distributions have greater variability in adults than in children of ages 4-17 years.

Figure 4. MEAN SERUM CHOLESTEROL LEVELS OF CHILDREN AGED 1-17 YEARS AND ADULTS AGED 18-74 YEARS BY AGE AND SEX: UNITED STATES, 1971-74



DISCUSSION AND CONCLUSION

The level of serum cholesterol has been identified as one of the multiple risk factors in the development of coronary heart disease. The results of epidemiological studies based on adult data from longitudinal studies such as the Framingham Heart Study[6] have demonstrated that persons with elevated serum cholesterol values developed coronary heart disease with greater frequency. Similar longitudinal data obtained from adolescents that relate serum cholesterol levels in younger ages to future morbidity or mortality are not available. There is some evidence, however, that atherosclerosis, more frequently manifested by coronary heart disease, may originate in childhood. Holman and others reported finding evidence of atherosclerosis in post mortems of children.[6] Enos and others reported gross evidence of coronary atherosclerosis in 77 percent of American soldiers, average age of 22 years, killed in the Korean War.[7]

Reference data of levels of children 4-17 years of age were presented and analyzed by age,

sex, and race because of the medical interest in such data. There are no such previous data for the general population of ages 4-17 years. Such data as are available are taken from selected segments of the population and special study groups. Such estimates could not be generalized to the U.S. population. HANES, on the other hand, provided cross-sectional data of serum cholesterol levels obtained on different age cohorts representative of the U.S. population. The age trends represented mean levels for successive cohorts of persons of different age groups. The limitation of cross-sectional data are recognized in considering group changes because they reflect effects of environment as well as developmental and hereditary influences.

Girls in most ages had higher mean serum cholesterol levels than boys. By race and sex, white girls generally had higher mean serum cholesterol levels than white boys of comparable ages. Similarly, among Negroes, girls had higher mean levels than boys. For both whites and Negroes, only boys of ages 11 and 12 years had higher mean serum cholesterol levels than girls of comparable age.

At each age group, with few exceptions, Negro boys had higher mean levels than white boys. This pattern is also evident for Negro girls as compared to white girls. The differences in mean levels between white and Negro were greater for girls than for boys. The average differences between the mean levels of whites and Negroes over the 14 ages was 7.1 mg per 100 ml for females and 3.8 mg per 100 ml for males.

The mean serum cholesterol level obtained for males age 17 years is consistent with the finding that serum cholesterol levels rise sharply with age for young men. Similar analysis of the mean cholesterol level for females age 17 years with those of females age 18-24 years shows that the mean values rise less rapidly than those of males. The increase in mean cholesterol levels observed in the data for females between the ages of 16 and 17 years is followed by an increase during the age group 18-24 years and a continued rise in serum cholesterol level among females in the 25-34 and 35-44 age groups, whereas in adult males the rise is not only more rapid but it begins earlier. Not only are the mean serum cholesterol levels higher in adults than in children but also the distributions have greater variability in adults than in children aged 4-17.

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Table 1. Serum cholesterol levels of children 1-17 years by sex and age with mean, standard deviation, and standard error of mean: United States, 1971-74

Age	Both sexes			Boys			Girls		
	Mean[1]	Standard deviation	Standard error of mean	Mean[1]	Standard deviation	Standard error of mean	Mean[1]	Standard deviation	Standard error of mean
1 year	165.4	34.9	†	167.2	38.5	†	163.2	29.6	†
2 years	176.6	33.7	†	172.5	36.2	†	180.6	30.6	†
3 years	170.8	31.6	†	167.7	29.3	†	174.3	33.6	†
4 years	172.9	30.2	2.08	171.3	28.7	1.97	174.7	31.7	3.52
5 years	172.6	36.2	1.84	168.9	35.8	2.66	176.0	36.1	2.80
6 years	173.6	30.0	2.22	170.1	26.8	2.07	177.1	32.5	3.93
7 years	175.4	30.7	2.81	175.8	28.1	4.45	175.0	33.4	2.95
8 years	180.0	30.1	2.21	173.4	27.6	2.63	186.5	31.2	3.14
9 years	183.9	35.2	2.49	182.5	36.6	3.43	185.2	33.8	3.00
10 years	181.5	32.6	2.48	181.4	25.4	2.43	181.6	38.2	4.24
11 years	179.2	32.8	2.74	181.4	32.4	3.16	176.8	33.0	3.49
12 years	177.7	33.3	2.54	179.9	37.0	3.95	175.0	27.9	3.51
13 years	171.8	37.7	2.67	173.3	40.4	4.45	170.4	35.2	3.16
14 years	171.0	34.7	1.83	169.1	35.8	2.80	172.8	32.4	2.82
15 years	173.2	35.2	2.59	168.8	33.9	3.08	177.8	35.9	4.12
16 years	171.3	32.0	1.87	168.6	29.3	2.89	174.0	34.3	3.04
17 years	173.3	33.7	2.64	167.5	30.9	3.18	180.6	35.7	3.44

[1]Mg per 100 ml.

†Standard error of mean not included because of possible bias due to missing values.

SYMBOLS

Data not available	...
Category not applicable	...
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

Table 2. Serum cholesterol levels of white and Negro children 1-17 years by sex and age with mean, standard deviation, and standard error of mean: United States, 1971-74

Age	White						Negro					
	Boys			Girls			Boys			Girls		
	Mean[1]	Standard deviation	Standard error of mean	Mean[1]	Standard deviation	Standard error of mean	Mean[1]	Standard deviation	Standard error of mean	Mean[1]	Standard deviation	Standard error of mean
1 year	166.5	40.2	†	162.4	30.0	†	170.5	28.2	†	176.6	19.4	†
2 years	172.8	36.3	†	180.3	30.1	†	175.6	31.5	†	181.4	33.0	†
3 years	168.0	29.2	†	172.2	33.3	†	170.6	30.0	†	192.4	29.0	†
4 years	170.5	28.4	2.27	173.8	32.6	3.93	175.6	30.5	5.50	177.1	25.4	5.03
5 years	168.0	35.7	2.69	173.2	35.6	3.35	174.3	36.2	8.84	190.3	35.9	6.46
6 years	168.7	26.9	2.41	177.8	31.7	3.96	176.3	25.7	5.15	175.3	35.2	6.60
7 years	174.5	27.6	4.64	172.8	32.8	3.44	185.1	29.9	6.21	186.9	34.5	6.82
8 years	171.5	26.8	3.15	183.6	30.5	3.35	186.0	28.5	4.97	202.8	29.7	7.52
9 years	182.0	35.9	4.07	183.6	33.9	3.46	184.5	39.1	6.89	194.1	29.5	5.71
10 years	182.9	25.1	2.57	179.9	39.8	4.83	172.0	26.2	5.59	192.2	25.0	5.18
11 years	180.8	31.7	3.49	179.0	31.3	3.34	185.7	36.9	8.04	164.6	38.7	10.29
12 years	179.0	37.2	4.34	177.1	26.9	4.19	184.1	36.1	6.61	166.0	31.1	7.50
13 years	174.3	40.2	5.14	168.3	35.7	3.52	167.2	41.1	7.90	183.6	28.9	5.98
14 years	169.6	35.8	3.17	171.4	30.8	3.03	161.8	40.7	8.66	175.1	38.0	7.58
15 years	166.3	28.1	2.70	174.4	33.6	3.55	169.7	29.4	3.49	194.5	41.5	12.36
16 years	167.2	28.8	3.28	173.3	34.4	3.50	178.7	30.7	5.62	182.4	31.7	8.44
17 years	166.9	30.8	3.61	180.3	35.8	3.93	173.8	32.2	7.92	183.3	36.3	7.10

[1] Mg per 100 ml.

†Standard error of mean not included because of possible bias due to missing values.

Table 3. Cumulative percent distribution of serum cholesterol levels of boys aged 1-17 years by age: United States, 1971-74

Serum cholesterol level (mg/100 ml)	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
	Cumulative percent distribution																
Under 100	3.78	1.62	0.0	1.56	0.42	0.0	0.0	0.0	0.0	0.0	0.0	0.19	0.16	0.26	0.30	0.0	0.0
Under 110	5.01	1.74	0.71	2.24	1.08	0.0	0.12	1.78	0.63	0.0	0.80	2.13	1.10	3.28	0.51	0.0	0.98
Under 120	6.72	4.99	2.39	3.30	2.87	0.67	1.42	3.14	0.63	0.45	2.40	2.13	1.37	5.14	3.21	0.16	3.32
Under 130	12.61	6.76	7.46	6.85	11.84	3.28	3.18	6.09	2.89	2.58	9.14	3.13	7.49	10.42	7.06	2.97	8.44
Under 140	22.93	12.08	17.12	12.86	18.46	10.80	9.62	10.86	9.25	3.91	19.18	7.98	16.68	22.58	15.93	16.13	19.35
Under 150	33.45	21.21	28.11	21.55	28.63	19.88	19.61	16.22	16.36	8.76	27.94	17.01	27.93	31.83	24.84	33.46	35.20
Under 160	43.83	35.17	41.90	31.84	43.53	38.67	28.47	28.59	27.17	18.45	36.57	27.13	42.73	43.37	40.13	43.33	45.19
Under 170	56.36	52.27	55.34	45.22	57.35	50.47	42.43	46.85	35.25	32.38	50.79	44.05	53.00	55.75	57.34	55.76	57.51
Under 180	68.71	67.00	69.01	63.60	66.71	71.91	61.58	62.10	47.67	51.60	62.00	54.15	63.45	64.09	69.06	73.14	67.01
Under 190	77.05	77.49	79.05	79.19	74.37	81.56	71.38	74.58	62.25	64.43	70.20	67.42	74.11	77.38	82.48	78.24	76.97
Under 200	81.27	83.48	86.50	85.44	81.05	89.02	81.96	84.64	74.71	78.37	78.91	78.85	77.54	82.47	89.35	88.01	81.37
Under 210	90.07	86.53	89.72	91.78	90.26	96.14	87.04	87.96	86.51	86.03	85.24	84.75	85.15	88.09	93.75	89.63	87.63
Under 220	91.70	93.98	94.74	95.49	93.73	97.64	91.92	94.96	92.36	92.22	93.93	89.44	91.16	91.31	94.72	91.75	95.21
Under 230	94.52	96.01	96.18	96.78	95.71	98.26	96.20	97.22	94.54	99.18	98.75	94.26	94.58	93.88	96.41	96.03	95.93
Under 240	96.76	97.06	98.72	97.89	96.88	98.62	99.71	99.37	94.75	98.06	97.72	95.86	95.84	95.39	95.80	95.70	99.07
Under 250	97.60	97.71	99.53	99.93	97.57	98.77	99.71	99.86	94.87	99.88	98.86	96.33	97.82	97.09	97.57	99.03	100.00
Under 280	99.16	97.71	100.00	100.00	98.86	98.77	99.71	99.65	94.87	99.88	98.86	98.12	97.84	98.40	98.40	99.72	100.00
Under 270	99.16	97.82	100.00	100.00	99.53	98.77	99.81	100.00	96.40	100.00	98.35	98.25	97.84	98.51	98.40	99.72	100.00
270 and over	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Examined children	133	168	224	304	273	179	184	152	169	184	178	200	174	174	171	169	176
Estimated population in thousands	793	1,042	1,294	1,707	1,720	1,783	1,879	1,977	2,032	2,064	2,096	2,136	2,125	2,111	2,106	2,072	2,007

Table 4. Cumulative percent distribution of serum cholesterol levels of girls aged 1-17 years by age. United States, 1971-74

Serum cholesterol level (mg/100 ml)	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
	Cumulative percent distribution																
Under 100	2.85	0.0	1.04	1.25	0.0	2.01	0.36	0.0	0.0	2.79	1.45	0.14	0.0	0.0	0.0	0.0	0.0
Under 110	3.50	0.26	1.86	1.60	1.11	2.01	0.49	1.44	0.0	2.79	1.45	0.14	1.41	0.59	0.0	0.75	0.0
Under 120	4.81	2.75	2.78	1.88	4.06	2.81	0.49	2.41	2.74	3.61	4.56	2.23	4.73	3.60	0.88	6.67	1.79
Under 130	13.59	6.57	6.63	3.63	8.91	6.83	4.25	4.22	3.59	5.61	5.94	3.27	6.84	7.12	4.50	9.17	2.59
Under 140	23.09	6.77	14.72	14.87	15.30	14.27	15.13	6.14	4.81	7.60	10.52	6.22	13.57	10.78	13.11	12.06	8.98
Under 150	36.51	9.85	25.47	22.07	22.78	21.29	24.93	8.13	12.45	17.36	16.20	16.70	26.52	21.54	23.39	25.67	18.78
Under 160	43.07	22.65	33.31	29.18	31.75	30.68	33.87	17.11	22.78	22.70	28.63	27.11	39.92	40.09	29.99	30.62	31.19
Under 170	49.11	36.64	46.77	47.18	44.36	38.86	44.77	28.57	33.22	33.26	45.77	50.53	53.71	52.45	42.34	46.86	42.25
Under 180	67.02	52.00	56.74	57.01	58.56	56.84	59.09	43.65	46.72	53.00	56.65	61.04	65.96	63.84	56.85	59.91	53.23
Under 190	78.29	67.05	67.66	69.84	72.97	66.73	68.96	51.06	59.22	65.25	66.60	70.37	76.58	70.37	73.16	71.40	67.13
Under 200	91.36	74.70	81.27	77.50	79.38	72.11	79.02	69.80	68.38	75.22	76.20	78.84	85.82	81.87	77.99	80.06	75.91
Under 210	94.71	87.88	86.55	86.96	83.53	83.45	85.16	79.72	80.92	81.92	87.61	89.48	91.14	87.82	82.82	88.04	81.91
Under 220	98.27	90.68	90.40	90.89	86.37	88.71	90.91	88.61	84.18	87.88	91.31	95.07	94.67	90.86	89.53	92.37	86.77
Under 230	99.48	93.80	94.56	96.74	93.89	95.67	91.80	91.27	88.68	93.96	92.58	97.35	97.23	94.82	93.90	94.51	90.08
Under 240	100.00	97.31	95.44	97.72	94.44	99.10	95.63	95.34	93.70	95.77	95.08	97.54	97.52	97.18	95.34	94.77	91.40
Under 250	100.00	97.31	98.95	99.62	96.43	100.00	97.81	96.91	96.67	96.84	97.88	97.54	97.73	98.38	95.34	96.81	95.26
Under 260	100.00	97.60	99.54	99.73	95.93	100.00	97.81	98.52	97.69	97.03	97.88	98.85	98.08	98.38	95.34	99.19	95.48
Under 270	100.00	99.23	99.54	99.73	98.05	100.00	99.19	98.52	97.87	97.03	99.23	99.85	98.66	99.18	96.84	99.81	97.96
270 and over	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Examined children	109	158	204	281	314	176	189	152	171	197	166	177	198	184	171	175	157
Estimated population in thousands	757	998	1,206	1,642	1,657	1,718	1,812	1,906	1,959	1,980	2,018	2,059	2,054	2,040	2,038	2,012	1,985

Table 5. Serum cholesterol levels of persons by sex and age, with number of persons examined, mean, and standard deviation. United States, 1971-74

Age	Male			Female		
	Number examined	Mean[1]	Standard Deviation	Number examined	Mean[1]	Standard Deviation
15 years	171	168.8	33.9	171	177.8	35.9
16 years	169	168.6	29.3	175	174.0	34.3
17 years	176	167.5	30.9	157	180.6	35.7
18-24 years	772	186.9	36.7	1,524	191.7	41.0
18 years	124	178.6	29.2	144	175.4	34.1
19 years	135	174.4	36.4	137	186.3	36.9
20 years	104	183.1	35.7	236	188.6	38.2
21 years	112	186.2	34.4	257	198.1	45.8
22 years	107	190.7	38.3	249	197.9	40.1
23 years	94	200.5	34.1	253	198.0	44.3
24 years	96	195.4	39.6	248	196.7	39.6
25-34 years	804	210.3	44.0	1,896	203.2	42.2
35-44 years	665	231.3	45.9	1,663	216.5	43.5
45-54 years	765	239.4	47.0	836	242.6	52.0
55-64 years	597	240.2	51.2	670	256.8	48.2
65-74 years	1,657	236.2	53.8	1,822	261.6	51.9

[1] Mg per 100 ml.

STATISTICAL NOTES

The sampling plan for the 65 preselected examination locations in the Health and Nutrition Examination Survey followed a highly stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the conterminous United States 1-74 years of age was selected. Successive elements dealt with in the process of sampling were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and finally, sample person. The sampling design provided for oversampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The serum cholesterol determinations are shown as population estimates; that is, the serum cholesterol findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and poststratified ratio adjustments were also made, and so the final sampling estimates of the population size were brought into closer alignment with the independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

Previous issues of *Advance Data From Vital and Health Statistics*

No. 1. Blood Pressure of Persons 6-74 Years of Age in the United States (Issued: October 18, 1976)

No. 2. Hypertension: United States, 1974 (Issued: November 8, 1976)

No. 3. Height and Weight of Adults 18-74 Years in the United States (Issued: November 19, 1976)

No. 4. Prevalence of Dermatological Diseases Among Persons 1-74 Years of Age, United States (Issued: January 26, 1977)

No. 5. A Comparison of Levels of Serum Cholesterol of Adults 18-74 Years of Age in the United States in 1960-62 and 1971-74 (Issued: February 22, 1977)

No. 6. Dietary Intake of Persons 1-74 Years of Age in the United States (Issued: March 30, 1977)

No. 7. Total Serum Cholesterol Levels of Adults 18-74 Years of Age, United States, 1971-74 (Issued: May 25, 1977)

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 9 August 10, 1977 | Public Health Service • Health Resources Administration

Wanted and Unwanted Births Reported by Mothers 15-44 Years of Age: United States, 1973[a]

According to the results of a national survey of households conducted in 1973 by the National Center for Health Statistics, one-fifth of all births (13.9 million out of 68.2 million) to mothers 15-44 years would not have occurred if these women had given birth only to those babies they reported as "wanted" at the time of conception. These estimates are based on answers to direct questions about the "wantedness" of each pregnancy that were asked during personal interviews with a sample of women aged 15-44 years who had ever been married or had children of their own living in the household.[b] These women participated in the National Survey of Family Growth which is based on a multistage area-probability sample of households in the conterminous United States. The interviews for Cycle I of the survey were conducted during an 8-month period the midpoint of which was September 13, 1973.

"Wanted" births are pregnancies resulting in at least one live birth that were reported as wanted or probably wanted prior to conception (see Technical Notes for the exact definition of these categories). On the other hand, "unwanted" births are pregnancies resulting in at least one live birth that were reported as not wanted or probably not wanted prior to conception. Pregnancies resulting in at least one live birth that were reported as neither wanted nor unwanted at the time of conception are classified as "undetermined" in these data. Pregnancies that did not result in at least one live birth (i.e., those that ended in miscarriage, stillbirth, or induced abortion) are excluded from this report. Although the word "birth" is used, wantedness is actually defined in relation to the pregnancy leading up to each birth. The questions asked in the interview focused on the time just before the woman became pregnant. This clearly distinguishes her desire for a baby before the pregnancy began from her later feelings toward the child who was born. In particular, it is incorrect to conclude that "unwanted births" are the same as "unwanted children," for many unplanned or undesired pregnancies result in children who are cherished. Because the figures presented are for pregnancies, not for births, multiple births such as twins and triplets have been counted only once since the multiple outcome presumably could not affect the woman's feelings about wantedness of the pregnancy at the time of its conception. It should be noted that the data on wanted and unwanted births presented in this report cannot be compared directly with data reported in previous fertility studies because different definitions of wantedness were used. This report is based on numbers of wanted and unwanted births, rather than on the number of women who have had an unwanted birth. The definition of wantedness is based solely on the woman's responses to questions about *her* feelings and not those of her husband. A later report will make comparisons with previous studies using comparable definitions.

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[b]"Children of their own" does not include adopted or foster children, or other children in the household who were not born to the woman interviewed.

HIGHLIGHTS

Table 1 shows that 4 out of every 5 births were reported by their mothers as wanted. But the 13.1 percent of births that were unwanted and the 7.3 percent of births for which the wantedness was undetermined together constitute 1 out of every 5 births to mothers aged 15-44 years in 1973. The proportion of births reported as unwanted increased with age, starting with about 1 out of every 12 births to mothers 15-24 years and rising to nearly twice that proportion, or 1 out of every 7 births to mothers aged 35 years and over. The differences by race are even more striking—1 in every 10 births to white mothers was reported as unwanted compared with 1 in every 4 births to Negro mothers. Similarly, Negro mothers had twice as many undetermined births in proportion to white mothers, leaving only 7 wanted births to Negro mothers (58.9 percent) for every 10 wanted births to white mothers (83.2 percent).

The proportion of unwanted births increased as parity increased. While women with 3 children reported 1 out of every 10 births as unwanted, women with 5 children reported twice as many unwanted births, and women with 6 children or more reported that 1 out of every 4 births was unwanted. There were no significant differences in wantedness by region or between mothers of Spanish origin and all other mothers. Less education for both the woman and her current husband (if any) was associated with fewer wanted births. There was no significant difference in the proportion of wanted births between mothers in, and those out of, the labor force. However, mothers with family incomes below the poverty level had a strikingly lower proportion of wanted births (66 percent) than mothers with family incomes at least 50 percent above the poverty level (83.6 percent). The difference in the reporting of wanted births between Protestants and Catholics was not statistically significant. But Jewish women reported a significantly larger proportion of wanted births compared with Catholics, Protestants, and those reporting other religions or no religious preference.

The proportion of unwanted births decreased from 3-in-10 to 1-in-10 as desired family size (an alternative measure of the number of wanted births) increased from 0 to 4, with a slight increase in unwanted births for larger desired family sizes. Among women who had never been married but who had children of their own living in the household,[c] the percentages of births reported as wanted and unwanted were significantly different from those reported by women who had been married at least once; only a little over half of the births to never-married mothers were reported as wanted. Between users and nonusers of contraception, there was no significant difference in the proportions of births reported as wanted or unwanted. But there was a marked difference in these proportions between those who were contraceptively sterilized (either male or female) and those using other methods of family planning. Those using sterilization reported fewer wanted births than those using other methods by 7 to 10 percentage points.

The pattern of wantedness by age and parity varied considerably between white and Negro mothers. Table 1 shows that the difference between the highest and lowest categories of age in the proportions of births reported as not wanted was 7.1 percentage points. Table 2 shows that this difference was almost doubled (to 13.5 percent) for Negro mothers, whereas it was virtually the same (7.2 percent) for white mothers. Looking at the pattern of unwanted births at the lowest and highest parity levels, table 1 shows a difference of 20.7 percentage points for all mothers. When this differential is examined by race, the difference shrinks to 16.3 percent for white mothers and expands to 24.7 percent for Negro mothers. Figure 1 shows the dramatic differences in the proportions of unwanted and undetermined births for white and Negro mothers and is helpful in identifying the specific groups that tend to have the largest proportions of unwanted births in the United States.

The proportions of wanted and unwanted births also differed by the current marital status

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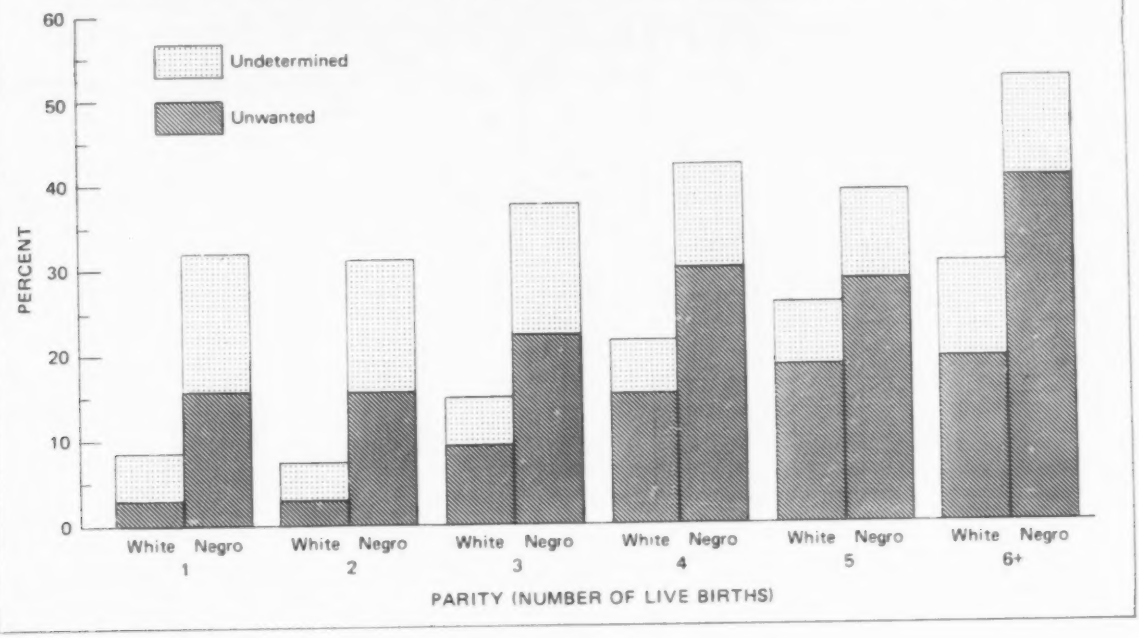
[c] Although the National Survey of Family Growth is predominantly a survey of ever-married women, it also includes families consisting of never-married mothers and their child(ren) if they reside in the same household. Hence the term "mother" refers to women who have not just borne a child but raised it as well.

Figure 1. PERCENT OF PREGNANCIES RESULTING IN A LIVE BIRTH, BY WHETHER THEY WERE REPORTED AS UNWANTED OR UNDETERMINED, BY RACE, AND PARITY: NATIONAL SURVEY OF FAMILY GROWTH, 1973



of women. A comparison of tables 1 and 3 shows that the proportion of wanted births was 2.6 percentage points higher for currently married mothers included in the survey. The greatest difference between currently married mothers and mothers of all marital statuses was found among Negro women; there were 5 percentage points more wanted births and 4 percentage points fewer unwanted births among the currently married.

Table 1. Number of mothers and of live births, and percent distribution of births, to mothers 15-44 years of age, by whether wanted, unwanted or undetermined, according to selected characteristics: United States, 1973

Characteristic	Number of mothers in thousands	Number of births in thousands	Total	Wanted	Unwanted	Undetermined
			Percent distribution			
Total	25,803	68,184	100.0	79.7	13.1	7.3
Age group						
15-24 years	4,375	6,542	100.0	81.9	8.3	9.8
25-29 years	5,487	11,471	100.0	83.6	10.3	6.1
30-34 years	5,617	15,469	100.0	80.5	12.1	7.4
35-39 years	5,108	16,686	100.0	76.7	15.2	8.1
40-44 years	5,216	18,015	100.0	78.3	15.4	6.2
Race						
White	22,182	57,551	100.0	83.2	10.5	6.2
Negro	3,359	9,984	100.0	58.9	27.9	13.2
Parity						
One live birth	6,297	6,297	100.0	87.7	*5.1	7.2
Two live births	8,154	16,221	100.0	90.1	4.3	5.6
Three live births	5,458	16,238	100.0	83.0	10.7	6.3
Four live births	2,812	11,088	100.0	76.6	16.6	6.9
Five live births	1,510	7,429	100.0	72.0	20.1	8.0
Six live births or more	1,572	10,911	100.0	63.0	25.8	11.2
Origin						
Spanish	1,900	5,501	100.0	76.4	13.7	10.0
All other	23,903	62,683	100.0	80.0	13.0	7.0
Region						
Northeast	5,406	14,032	100.0	80.9	12.0	7.1
North Central	6,757	18,502	100.0	79.0	14.0	7.0
South	8,500	21,771	100.0	79.1	13.3	7.6
West	5,139	13,880	100.0	80.3	12.6	7.2
Woman's education						
Less than high school	2,622	9,123	100.0	72.6	16.5	10.9
High school, 1-3 years	5,697	16,884	100.0	73.3	17.9	8.8
High school, 4 years	12,161	29,917	100.0	82.5	11.1	6.5
College, 1-3 years	3,182	7,585	100.0	86.1	9.7	*4.2
College, 4 years or more	2,140	4,675	100.0	87.9	7.4	*4.8
Husband's education						
Less than high school	3,397	11,782	100.0	73.3	16.9	9.8
High school, 1-3 years	4,830	13,610	100.0	74.4	16.6	9.0
High school, 4 years	8,943	22,526	100.0	82.1	11.7	6.2
College, 1-3 years	3,739	9,081	100.0	83.5	9.9	6.6
College, 4 years or more	4,123	9,787	100.0	89.2	7.7	*3.2

Table 1. Number of mothers and of live births, and percent distribution of births, to mothers 15-44 years of age, by whether wanted, unwanted or undetermined, according to selected characteristics: United States, 1973—Con.

Characteristic	Number of mothers in thousands	Number of births in thousands	Total	Wanted	Unwanted	Undetermined
			Percent distribution			
Woman's labor force status						
Not in labor force	15,678	42,230	100.0	80.6	12.3	7.2
In labor force	10,125	25,954	100.0	78.2	14.4	7.4
Working full time	6,570	16,654	100.0	77.2	15.1	7.7
Working part time	2,716	7,110	100.0	81.4	12.7	5.9
Not working	838	2,190	100.0	75.5	*14.5	*10.0
Poverty level[1]						
Below 100 percent	3,222	10,697	100.0	66.0	21.5	12.6
100-149 percent	2,596	8,211	100.0	73.8	16.6	9.6
150 and above	19,985	49,277	100.0	83.6	10.6	5.7
Religion						
Catholic	7,294	20,259	100.0	81.5	11.4	7.1
Protestant	17,028	44,684	100.0	78.7	13.9	7.4
Jewish	398	898	100.0	88.7	*6.6	*4.7
Other	343	824	100.0	81.8	*12.6	*5.6
None	739	1,520	100.0	76.5	*15.4	*8.1
Desired family size						
No children	1,337	3,562	100.0	60.9	30.9	*8.1
One child	989	1,928	100.0	68.6	20.4	*11.0
Two children	10,880	23,361	100.0	80.4	13.0	6.5
Three or four children	10,477	29,514	100.0	82.0	10.7	7.3
Five or six children	1,603	6,918	100.0	81.6	12.0	6.4
Seven children or more	517	2,903	100.0	75.8	13.3	*10.9
Fetal losses						
No losses	19,205	48,713	100.0	79.7	12.7	7.6
One loss	4,551	12,757	100.0	80.2	13.2	6.6
Two losses	1,247	4,133	100.0	77.3	16.4	*6.3
Three losses or more	800	2,581	100.0	80.2	13.8	*6.0
Times married						
Never married	771	1,399	100.0	53.4	27.9	*18.7
Once married	21,493	55,980	100.0	80.9	12.1	7.1
Twice married or more	3,539	10,806	100.0	76.9	16.4	6.7
Most recent contraceptive use						
Nonusers	2,166	5,229	100.0	79.9	10.3	9.9
Users	22,623	59,635	100.0	79.5	13.4	7.2
Sterilization	4,821	16,574	100.0	73.5	18.5	8.0
Pill or IUD	10,278	23,512	100.0	80.4	12.5	7.1
Other methods	7,523	19,550	100.0	83.4	10.0	6.6

[1] "Poverty level" designates the ratio of total family income to poverty level income. See the definitions in the Technical Notes.

Table 2. Number of mothers and of live births, and percent distribution of births, to mothers 15-44 years of age, by whether wanted, unwanted or undetermined, according to age and race, and parity and race: United States, 1973

Characteristic	Number of mothers in thousands	Number of births in thousands	Total	Wanted	Unwanted	Undetermined
			Percent distribution			
Total	25,803	68,184	100.0	79.7	13.1	7.2
AGE AND RACE						
White						
15-24 years	3,410	5,029	100.0	86.9	*5.4	7.8
25-29 years	4,799	9,764	100.0	87.2	8.2	4.6
30-34 years	4,938	13,262	100.0	83.5	9.9	6.6
35-39 years	4,436	14,174	100.0	80.6	12.3	7.0
40-44 years	4,601	15,321	100.0	81.8	12.6	5.6
Negro						
15-24 years	940	1,468	100.0	64.6	*18.7	*16.6
25-29 years	632	1,579	100.0	61.9	*23.6	*14.5
30-34 years	615	2,024	100.0	60.3	26.4	*13.2
35-39 years	596	2,330	100.0	52.7	32.9	*14.4
40-44 years	576	2,583	100.0	58.2	32.2	*9.5
PARITY AND RACE						
White						
One live birth	5,224	5,224	100.0	91.4	*3.1	*5.5
Two live births	7,257	14,441	100.0	92.5	3.0	4.4
Three live births	4,895	14,579	100.0	85.2	9.5	5.3
Four live births	2,435	9,603	100.0	78.5	15.3	6.1
Five live births	1,261	6,213	100.0	74.1	18.6	7.3
Six live births or more	1,111	7,491	100.0	69.6	19.5	11.0
Negro						
One child	1,003	1,003	100.0	68.0	*15.8	*16.2
Two children	809	1,604	100.0	69.1	*15.7	*15.2
Three children	519	1,537	100.0	62.4	*22.2	*15.4
Four children	345	1,357	100.0	61.8	*26.0	*12.2
Five children	229	1,120	100.0	60.9	*28.4	*10.8
Six children or more	453	3,363	100.0	47.8	40.5	11.7

Table 3. Number of mothers and of live births, and percent distribution of births, to currently married mothers 15-44 years of age, by whether wanted, unwanted or undetermined, according to race and parity: United States, 1973

Characteristic	Number of mothers in thousands	Number of births in thousands	Total	Wanted	Unwanted	Undetermined
			Percent distribution			
Total	21,816	57,524	100.0	82.3	11.2	6.6
RACE						
White	19,764	51,391	100.0	84.2	9.8	6.0
Negro	1,822	5,561	100.0	63.9	23.9	12.2
Parity						
One live birth	5,086	5,086	100.0	92.0	*2.8	*5.1
Two live births	7,107	14,146	100.0	92.1	3.1	4.8
Three live births	4,740	14,098	100.0	85.1	9.4	5.5
Four live births	2,352	9,268	100.0	78.3	15.1	6.7
Five live births	1,277	6,287	100.0	73.9	17.9	8.1
Six live births or more	1,254	8,637	100.0	66.2	22.9	10.9

TECHNICAL NOTES

DESIGN OF THE SURVEY: The National Survey of Family Growth (NSFG), initiated in 1971, is designed to provide data on fertility, family planning, and related aspects of maternal and child health. Field work for Cycle I was carried out by the National Opinion Research Center in 1973 and early 1974 with September 13, 1973, as the midpoint of the interviewing.

A multistage probability sample of women in the noninstitutional population of the conterminous United States was used. Approximately 33,000 households were screened to identify the sample of women who would be eligible for the NSFG; i.e., women between the ages of 15 and 44 years, inclusive, who were currently married or previously married or who had never married but had natural children presently living in the household. In households with more than one eligible woman, a random procedure was used to select only one to be interviewed. Since the interviews were always conducted with the sample person, the term "woman" is used throughout this report as synonymous with sample person. Interviews were completed for 3,856 Negro women and for 5,941 women of other races. A detailed description of the sample design will be presented in a forthcoming report "Sample Design, Estimation Procedures, and Variance Estimation for a National Survey of Family Growth."

The interview was narrowly focused on the respondents' marital and pregnancy histories, on their use of contraception and the planning status of each pregnancy, on the respondents' intentions regarding the number and spacing of future births, on maternity and family planning services, and on a broad range of social and economic characteristics. While the interviews varied greatly in the time required for their completion, they averaged about 70 minutes. Quality control procedures were applied at all stages of the survey. This included a verification of listing completeness with unlisted dwelling units being brought into the sample, a preliminary field review of completed questionnaires for possible missing data or inaccurate administration, a 10-percent sample recheck of all households to be screened in the survey, observation of interviews in the field, and an independent recoding of a 5-percent subsample of completed interviews.

RELIABILITY OF ESTIMATES: Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken, using the same questionnaires, instructions, interviewing personnel, and field procedures. This chance difference between sample results and a complete count is referred to as "sampling error." In addition, the results are also subject to nonsampling error due to respondent misreporting, data processing mistakes, and nonresponse. It is very difficult, if not impossible, to obtain accurate measures of nonsampling errors. These types of errors were kept to a minimum by the quality control procedures and other methods incorporated into the survey design and administration.

Sampling error, or the extent to which samples may differ by chance from a complete count, is measured by a statistic called the "standard error of estimate." Approximate standard errors for estimated numbers and percentages from this survey are shown in tables I and II for all pregnancies, regardless of their outcome.

The chances are about 68 out of 100 that an estimate from the sample would differ from a

Table I. Approximate standard errors for estimated numbers for pregnancies: 1973 National Survey of Family Growth

Size of estimate	Relative standard error	Standard error
100,000	46.4	46,000
250,000	29.3	73,000
500,000	20.7	104,000
1,000,000	14.6	146,000
2,500,000	9.2	230,000
5,000,000	6.4	322,000
10,000,000	4.5	445,000
25,000,000	2.6	658,000
50,000,000	1.6	811,000

Table II. Approximate standard errors for estimated percentages expressed in percentage points for pregnancies: 1973 National Survey of Family Growth

Base of percentage	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
700,000	2.5	3.8	5.3	7.0	8.0	8.6	8.8
1,000,000	2.1	3.2	4.4	5.9	6.7	7.2	7.3
3,000,000	1.2	1.8	2.5	3.4	3.9	4.1	4.2
7,000,000	0.8	1.2	1.7	2.2	2.5	2.7	2.8
10,000,000	0.6	1.0	1.4	1.9	2.1	2.3	2.3
30,000,000	0.4	0.6	0.8	1.1	1.2	1.3	1.3
70,000,000	0.2	0.4	0.5	0.7	0.8	0.9	0.9

complete census by less than the standard error. The chances are about 95 out of 100 that the differences between the sample estimate and a complete count would be less than twice the standard error. The relative standard error is the ratio of the standard error to the statistic being estimated. In this report, numbers and percentages that have a standard error that is more than 25 percent of the estimate itself are considered "unreliable." They are marked with an asterisk to caution the user but may be combined to make other types of comparisons of greater precision.

In this report, terms such as "similar" and "the same" mean that any observed difference between two estimates being compared is not statistically significant. Similarly, terms such as "greater," "less," "larger," "smaller," etc., indicate that the observed differences are statistically significant. The normal deviate test with a .05 level of significance was used to test all comparisons that are discussed in the text. A statistically significant difference is one large enough that in repeated samples of the same size and type as this one, such a large difference would be expected to be found in less than 5 percent of the samples. Lack of comment in the text between any two statistics does *not* mean the difference was tested and found not to be significant.

DEFINITION OF TERMS

Wantedness.—The definition of wantedness is based on direct responses to several questions about each time that a woman has conceived. For a woman who reports that contraceptive use was stopped prior to conception, and for those who report that no contraceptive method was used in the interval preceding conception (which begins with the end of the preceding pregnancy, if applicable), the question on wantedness is phrased as follows: "Was the reason you (were not/stopped) using any method because you, yourself, wanted to become pregnant?" An affirmative response to this question is defined as a "wanted" pregnancy. If the woman answers negatively, she is asked two followup questions which are identical to those asked of all other respondents. These questions are: "At the time you became pregnant (THIS INTERVAL)[d] did you, yourself, actually want to have a(nother) baby at some time?" and "As you recall, is that how you felt *before* you became pregnant, or did you come to feel that way later?" The latter question is rephrased as follows for women who indicated that they did not know or care whether or not they wanted to have a(nother) baby: "It is sometimes difficult to recall these things, but as you look back to *just before* that pregnancy began, would you say you probably

[d] Parentheses indicate that the interviewer chose the appropriate wording for respondent. "THIS INTERVAL" means that the interviewer inserted the name or dates of the child or pregnancy that defined the interval in question.

wanted a(nother) baby some time or probably not?"

A pregnancy is defined as "wanted" if the woman reports that (a) contraception was not used in the interval or was stopped prior to conception *because* the woman wanted to become pregnant, or (b) she wanted to have a(nother) baby at some time and felt that way *before* becoming pregnant, or (c) she reported that she probably wanted a(nother) baby at some time. A pregnancy is defined as "unwanted" if the woman reports that she did not want, or probably did not want to have a(nother) baby at some time and felt that way *before* becoming pregnant. All other pregnancies are termed "undetermined." Table III shows the breakdown by the subcategories of the components of wantedness for pregnancies ending in live births and fetal losses.

Age.—In this report, age is classified by the age of the respondent at her last birthday before the date of interview.

Race.—Classification by race, based on interviewer observation, was reported as Negro, white, or other. Race refers to the race of the woman interviewed.

Spanish origin.—A respondent was classified as being of Spanish origin if she reported her origin or descent as Mexican, Chicano, Mexican American, Puerto Rican, Cuban, or other Spanish.

Region.—Region refers to the part of the country where the respondent was living at the time of the survey according to the definition of the U.S. Bureau of the Census.

Marital Status.—Persons are classified by marital status as married, widowed, divorced, separated, or never married. Married persons include those who report themselves as married or as informally married, such as living with a partner or common-law spouse. Persons who are temporarily separated for reasons other than marital discord, such as vacation, illness, or Armed Forces, are classified as married. Divorced persons are those whose most recent marriage was legally dissolved and who are free to remarry. The annulled, while having the legal status of never having been married, are classified together with the divorced. The category "separated" includes those who are legally or informally separated from their most recent spouse due to marital discord. The "never mar-

Table III. Percent distribution of subcategories of wantedness by race for all pregnancies regardless of outcome: United States, 1973

Category of wantedness	Total	Negro	White and other
Total	100.0	100.0	100.0
Wanted			
Contraception stopped or not used	44.7	29.5	56.8
Wanted prior to conception	27.0	29.4	25.2
Probably wanted prior to conception	1.0	1.1	0.9
Unwanted			
Unwanted prior to conception	18.6	28.3	10.9
Probably unwanted prior to conception	0.3	0.4	0.2
Undetermined			
Wanted after conception	5.9	7.0	4.9
Unwanted after conception	2.2	3.9	0.9
Don't know or care	0.3	0.4	0.2

ried" include those who have never had a formal marriage and do not consider themselves in any of the preceding categories. However, in the NSFG, single women with children of their own in the household were included.

Times married.—The number of times a woman has been married, according to the definition of marital status as offered in the preceding paragraph.

Education.—The highest year of regular schooling completed is used to define education for the woman and her current or most recent husband.

Labor force status.—A woman is categorized as being in the labor force if she was working full time or part time, had a job but was not at work because of temporary illness, vacation, or a strike, or if she was unemployed, laid off, or looking for work.

Poverty level.—The poverty index ratio was calculated by dividing the total family income by the weighted average threshold income of nonfarm residents, head under 65, based on the poverty levels shown in the U.S. Bureau of the Census, *Current Population Reports*, Series P-60, No. 98, "Characteristics of the Low-Income Population, 1973," table A-3. This definition takes into account the sex of the family head and the number of persons in the family. Total family income includes income from all sources for all members of the respondent's family.

Religion.—Women were asked whether they were Protestant, Catholic, Jewish, or something else. Protestant includes most of the Christian groups other than Roman Catholic. The "other" category includes non-Christians except those answering "none."

Parity.—Parity refers to the number of live births the respondent has had.

Desired family size.—The number of children a woman reported that she would have if she could start life over again and have exactly the number of children she wanted.

Fetal losses.—The number of pregnancies reported by the respondent ending in miscarriage, stillbirth, or induced abortion.

Most recent contraceptive use.—Nonusers are women who have never used a contraceptive method or gave no indication of ever having used a method for the purpose of delaying or preventing a pregnancy. Users are women who have ever used at least one contraceptive method (including sterilization at least partly for contraceptive reasons) for that purpose, and this is the current method for women using contraception at the date of the interview.

EFFECTS OF IMPUTATION: In 477 cases out of 27,198 records of pregnancies, there was no code for determining the wantedness status of the pregnancy concerned. Interviewer's error, coding and keypunching errors or the respondent's nonresponse for a specific item are some possible reasons for this. Thus, for 1.8 percent of all pregnancies, a code for wantedness was imputed on the basis of respondents matched on race, age, pregnancy interval order, and parity, using the "hot deck" procedure for imputations. It is possible to assess the effects of this procedure by comparing the resulting distribution with one including the unknown values as a separate category. The imputed proportions differ from the unimputed proportions by an average of 0.4 percentage points, with the largest difference being in the "wanted" category for Negro women of 0.9 percent.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

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Previous issues of *Advance Data From Vital and Health Statistics*

No. 1. Blood Pressure of Persons 6-74 Years of Age in the United States (Issued: October 18, 1976)

No. 2. Hypertension: United States, 1974 (Issued: November 8, 1976)

No. 3. Height and Weight of Adults 18-74 Years in the United States (Issued: November 19, 1976)

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No. 5. A Comparison of Levels of Serum Cholesterol of Adults 18-74 Years of Age in the United States in 1960-62 and 1971-74 (Issued: February 22, 1977)

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No. 7. Total Serum Cholesterol Level of Adults 18-74 Years of Age in the United States in 1971-74 (Issued: May 25, 1977)

No. 8. Total Serum Cholesterol Level of Children 4-17 Years of Age in the United States in 1971-74 (Issued: July 11, 1977)

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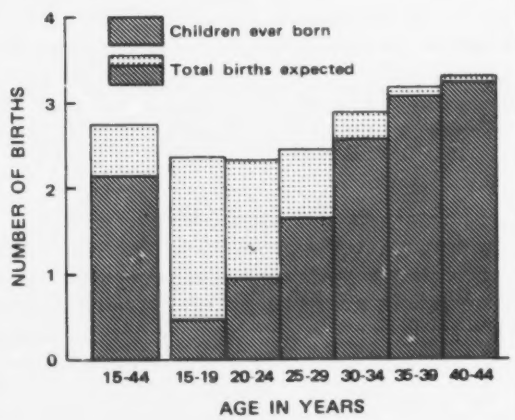
FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE | No. 10 August 12, 1977 | Public Health Service • Health Resources Administration

Expected Size of Completed Family Among Currently Married Women 15-44 Years of Age: United States, 1973[a]

Currently married women aged 40-44, who are near the end of their childbearing period, expect to have an average of 3.3 children. But those aged 20-24, who are beginning their childbearing, expect an average of only 2.3 children. Although the younger women are less sure about their expectations than the older women, the statistics reflect definite age differences in birth expectations. If realized in actual fertility, Figure 1 shows that these differences will result in a significant decline in completed family size.

The expected decline in fertility is found in nearly all subgroups of the population, even though there are different levels of expectations among these subgroups. For instance, the total number of births expected by currently married women decreases as education increases and as age at marriage increases. Also, Negro wives, Catholic wives, wives who participate more in religious activities, wives who are not in the labor force, and wives whose first child was born before marriage, expect more total births than other wives.

Figure 1. Average number of children ever born and total births expected per currently married woman 15-44 years old by age: United States, 1973



These and other findings presented in this report are from Cycle I of the National Survey of Family Growth (NSFG), conducted by the National Center for Health Statistics. The NSFG was designed to provide information about fertility, family planning, and aspects of maternal and child health related to childbearing. Data on these topics were collected by personal interviews with about 9,800 women aged 15-44 years who had ever been married or who had children of their own living in the household. Interviews were conducted between July 1973 and February 1974, centering on September 1973. The statistics in this report refer to currently married women living in the conterminous United States, and are based on interviews with a representative sample of 7,566 such women. Further discussion of the survey design, definition of terms, and sampling variability are in the Technical Notes.

RANGE OF BIRTH EXPECTATIONS

The number of births that women expect to have may not forecast future births accurately because women may change their minds, they

[a]Prepared by Gordon Scott Bonham, Ph.D., Division of Vital Statistics.

may not be able to have the expected births, or they may unintentionally have more births than expected. The NSFG allowed for some of these uncertainties in interviewing women on expectations. Wives were asked how many additional births they intended to have, if any, and how certain they were of achieving those intentions. Those who expressed uncertainty, about one-third of the total, were asked the minimum and maximum numbers they actually expected to have.

The range of births expected per 1,000 currently married women 15-44 years old is shown in table 1. Overall, women expected to have between 2,653 and 2,985 births per 1,000 women (or 2.7 and 3.0 births each) by the time they finish childbearing. Of these expected births, 2,180 (or 2.2 births each) have already occurred. The difference between minimum and maximum expected births decreases as age increases. Most of this difference is due to the higher proportion of expected births that have already occurred among older women and therefore present no uncertainty. About one-fourth of the minimum births expected by women 15-19 years old have occurred, and this proportion increases to almost 100 percent for women 40-44 years old.

Regardless of the certainty of her intentions, a central number of births was determined for each woman by a procedure described in the Technical Appendix. The central number of births expected by women in the sample population is between the minimum and maximum, although it is slightly closer to the minimum. This number increases with age, except for a statistically insignificant decrease between ages 15-19 and 20-24. The increase is not solely due to events associated with different stages of the life cycle. It also represents diversified birth expectations of different cohorts of women. Those aged 40-44 in 1973 had most of their children during the high fertility period of the 1950's and the early 1960's, often referred to as the "baby boom." However, women in their twenties in 1973 were starting their families during a period of low fertility. The age comparison in table 1 reflects the changes in fertility shown in table A. There is not much difference in the number of total births expected or children ever born by the time of the interview among women aged 30 or over between 1960 and 1973. However, there are dramatic changes for women under age 30. Wives 18-24 years old in 1973 expect to have an average of 0.8 children fewer by the time they complete childbearing than wives 18-24 years old in 1960 or 1965. Wives 25-29 years old in 1973 expect to have 1.0 fewer children than wives of a similar age in either 1960 or 1965. This expectation of smaller families is not unreasonable since they have already had an average of 0.5-0.8 fewer children than the wives of comparable age 8 to 13 years earlier.

COMPARISON WITH OTHER DATA

Other surveys have collected data on birth expectations, as indicated in table A. Most notably, the U.S. Bureau of the Census asked about birth expectations in the June 1973 Current Population Survey (CPS). A comparison of the NSFG of 1973 with the CPS of 1973 is shown in table B. Except for wives 35-39 years old, the NSFG reports slightly higher birth expectations than the CPS does. While the differences are of demographic significance, they are approximately equal to the standard error of the differences, and thus not statistically significant. The small differences in the two estimates could be due to differences between the surveys in any or all of the following: 1) allowances for uncertainty in birth expectations in the NSFG, 2) characteristics of wives reporting, 3) dates of survey, 4) total content of the interview, or 5) categorization of marital status.

BIRTHS DESIRED

The number of births that a woman would like (or desire) if she could have just the number she wanted, is shown in table 1. The number of births desired by wives of all ages is approximately equal to the central number of births they expect to have. However, wives under age 30 expect to have fewer births than they would like, while wives age 30 or older expect to have more births than they would like. These differences could be due to differential ability to control fertility, specific temporal conditions or

Table A. Average number of total births expected and children ever born per currently married woman 18-39 years old in selected years by age: United States, 1960-1973

Total births expected, children ever born and age	1960[a]	1965[a]	1967[b]	1970[a]	1971[b]	1972[b]	1973[c]
Total births expected							
18-24 years old	3.1	3.1	2.9	2.6	2.4	2.3	2.3
25-29 years old	3.4	3.4	3.0	2.8	2.6	2.5	2.4
30-34 years old	3.3	3.6	3.3	3.1	3.0	2.9	2.9
35-39 years old	3.0	3.4	3.3	3.4	3.3	3.2	3.2
Children ever born							
18-24 years old	1.4	1.5	1.2	1.1	1.0	0.9	0.9
25-29 years old	2.4	2.5	2.3	2.1	1.9	1.8	1.7
30-34 years old	2.7	3.1	3.1	2.9	2.8	2.7	2.6
35-39 years old	2.7	3.2	3.2	3.3	3.2	3.2	3.1

[a]Figures are from the 1960 Growth of American Families Survey and the 1965 and 1970 National Fertility Surveys as reported in U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 263 (April 1974), table C.
[b]U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 269 (September 1974).
[c]National Survey of Family Growth.

Table B. Number of total births expected per 1,000 currently married women 18-39 years of age for the National Survey of Family Growth and the Current Population Survey: United States, 1973

Age	National Survey of Family Growth	Current Population Survey
18-39 years	2,674	2,639
18-24 years	2,320	2,262
25-29 years	2,445	2,387
30-34 years	2,879	2,804
35-39 years	3,183	3,234

Source: Data for the Current Population Survey is from U.S. Bureau of the Census, *Current Population Reports*, Series P-20, No. 265, "Fertility Expectations of American Women: June 1973," Washington. U.S. Government Printing Office, 1974.

differential interpretations of expected and desired numbers of births. There is less variation by age of women in the number of births they desire than in the number of births they actually expect.

TIMING OF BIRTHS

Table 2 shows that 78 percent of the total births expected by currently married women 15-44 years old have already occurred. This varies directly by age with wives under age 20 having borne 20 percent of their expected births, while wives age 40-44 have borne 99 percent of their expected births. Wives 15-19 years old expect to have 79 percent of their births by the time they are 20-24, while wives 20-24 years old at the date of the survey had only had 40 percent of their expected births by this same age. Similarly, wives 20-24 years old expected to have 85 percent of their total births by the time they are 25-29 while wives currently 25-29 years old have had 68 percent of their births. These observations suggest at least one of the following: 1) women who marry at younger ages, who predominate among women aged 15-19, have different patterns of childbearing than women who marry at slightly older ages, who are more numerous among women aged 20-24; 2) births among younger women are concentrated within a narrower time period than they were among older women; or 3) younger women do not have realistic expectations of the timing of their future births.

VARIATIONS IN BIRTH EXPECTATIONS

Table 1 shows that Negro wives at all ages expect to have more total births than do white wives. However, the difference decreases from 1,111 births per 1,000 wives aged 40-44, to 140 births per 1,000 wives aged 15-19. The higher

total birth expectations of Negro wives is due to their already having had more children than white wives.

Table 3 shows that the fertility of wives of Spanish origin or descent is more similar to that of Negro wives than to white wives. Compared with wives of other origins or descents, Spanish wives expect to have almost 25 percent more total births. This is due to their already having more children and expecting more children in the future than wives of other origin.

The greater the education of currently married women, the fewer total births they expect. This pattern is similar for each age group. The timing of births, however, is different for women with different amounts of education. Except for those with 1-3 years of high school, the more educated women expect more births in the future than their less educated counterparts, and have had fewer births in the past.

Wives in the labor force expect fewer total births than wives not in the labor force. Those working full-time expect fewer total births than women working part-time. Women working full-time have also postponed a larger number of births than women either working part-time or who are not in the labor force.

Currently married women whose family income is 150 percent or more of the poverty threshold expect to have fewer total births than women whose family income is less than 150 percent of the poverty threshold. This pattern applies to all ages 20 years or older. There is no difference in birth expectations for women below the poverty threshold and those whose family income is 100-149 percent of the poverty threshold.

Roman Catholic wives expect to have more total births than Protestant wives. Protestant wives, in turn, expect to have more total births than Jewish wives or wives of other or no religious identification. There is no difference in the timing of the births for Catholic, Protestant and Jewish wives because the pattern is apparent in both categories—children ever born and additional births expected. Catholic and Protestant wives who participate more frequently in religious activities expect more total births by the end of their childbearing than do women of the same religious identification who participate less frequently.

The older the woman was at the time of her first marriage, the fewer births she expects by the time she completes her childbearing. The difference between women married at ages 20 to 21 and those married at ages 22-24 years, however, is not statistically significant. The pattern of decreasing numbers of total births expected with increasing age at marriage is observed for most age groups. However, there is also a general pattern of increasing numbers of additional births expected with increasing age at marriage indicating a difference by age of marriage in the timing of childbearing.

The timing of the first birth in relationship to marriage affects the total number of children a woman expects to have. Women who had a premarital birth expect to have 699 more births per 1,000 women than those whose first birth occurred after marriage. Except for women 40-44 years old, there is no difference in the total number of births expected by wives whose first child was born within 8 months of marriage and those whose first child was born 8-14 months after marriage. However, women who waited 15 months or more for the birth of their first child have significantly lower total birth expectations than those having a birth sooner after marriage. Wives with no live births by the survey date expect fewer total births than wives with at least one birth, regardless of its timing.

For all ages, women using contraception expect the same number of total births as women not using contraception. However, women who are using contraception have already borne more children. At ages 30 or older women using contraception expect to have more total births than women not using contraception. Among women who report that they are not using contraception, sterile women have had more births than other women expect to have; sterile women are older than other women not using contraception. Women who were pregnant, post partum, or trying to become pregnant at the date of interview are predominantly in the early years of their childbearing. While they expect about the same number of total births as women not using contraceptives, they have borne fewer children. Women sterilized for contraceptive reasons, or whose husbands have been sterilized, have borne more children than any other group of contracepting or noncontracepting women expect to have.

Table 1. Number of currently married women 15-44 years old, number of children they have borne, minimum, maximum, and central number of births expected, and number of births desired per thousand, by race and age: United States, 1973

Race and age	Number of wives in thousands	Children ever born	Minimum births expected	Central number of births expected	Maximum births expected	Births desired
All races						
15-44 years	26,646	2,180	2,653	2,783	2,985	2,753
15-19 years	1,028	479	2,047	2,376	2,684	2,644
20-24 years	4,949	921	2,057	2,313	2,653	2,491
25-29 years	6,063	1,651	2,250	2,445	2,696	2,530
30-34 years	5,248	2,575	2,791	2,879	3,063	2,712
35-39 years	4,632	3,054	3,155	3,183	3,313	3,036
40-44 years	4,726	3,251	3,279	3,297	3,361	3,104
White						
15-44 years	24,249	2,139	2,607	2,737	2,933	2,749
15-19 years	915	438	2,022	2,358	2,672	2,621
20-24 years	4,469	875	2,025	2,283	2,612	2,484
25-29 years	5,579	1,614	2,208	2,406	2,651	2,523
30-34 years	4,768	2,523	2,737	2,821	2,998	2,688
35-39 years	4,199	3,041	3,130	3,157	3,281	3,049
40-44 years	4,320	3,172	3,198	3,215	3,276	3,119
Negro						
15-44 years	2,081	2,712	3,198	3,326	3,610	2,759
15-19 years	96	820	2,197	2,498	2,777	2,692
20-24 years	451	1,365	2,336	2,575	3,024	2,540
25-29 years	417	2,147	2,749	2,922	3,295	2,627
30-34 years	402	3,160	3,447	3,534	3,782	2,844
35-39 years	347	3,513	3,671	3,714	3,933	2,909
40-44 years	367	4,255	4,303	4,326	4,413	2,960

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

Table 2. Number of children already born, additional births expected by timing, and percent total of births expected per 1,000 currently married women 15-44 years old, by race and age: United States, 1973

Race and age	Children already born	Additional births expected			Total births expected	Percent total of births expected		
		Within 2 years	Within 5 years	In all future years		Already occurred	Completed within 2 years	Completed within 5 years
All races								
15-44 years	2,180	153	447	603	2,783	78	84	94
15-19 years	479	458	1,391	1,897	2,376	20	39	79
20-24 years	921	283	1,049	1,392	2,313	40	52	85
25-29 years	1,651	226	598	794	2,445	68	77	92
30-34 years	2,575	104	223	304	2,879	89	93	97
35-39 years	3,054	46	82	130	3,183	96	97	99
40-44 years	3,251	15	26	47	3,297	99	99	99
White								
15-44 years	2,139	151	444	599	2,737	78	84	94
15-19 years	438	467	1,406	1,920	2,358	19	38	78
20-24 years	875	286	1,065	1,408	2,283	38	51	85
25-29 years	1,614	224	594	793	2,406	67	76	92
30-34 years	2,532	100	207	289	2,821	90	93	97
35-39 years	3,041	43	76	116	3,157	96	98	99
40-44 years	3,172	14	23	43	3,215	99	99	99
Negro								
15-44 years	2,712	157	459	613	3,326	82	86	95
15-19 years	820	411	1,249	1,678	2,498	33	49	83
20-24 years	1,365	255	930	1,210	2,575	53	63	89
25-29 years	2,147	238	600	775	2,922	73	82	94
30-34 years	3,160	119	310	374	3,534	89	93	98
35-39 years	3,513	52	77	200	3,714	95	96	97
40-44 years	4,255	21	41	71	4,326	98	99	99

Table 3. Number of total births expected and children ever born per 1,000 currently married women 15-44 years old by age and by selected characteristics: United States, 1973

Selected characteristics	Total	Age in years					
		15-19	20-24	25-29	30-34	35-39	40-44
	Total births expected						
All women	2,783	2,376	2,313	2,445	2,879	3,183	3,297
Origin							
Spanish	3,403	2,886	2,810	3,258	3,395	3,840	3,840
Other	2,741	2,324	2,279	2,394	2,854	3,118	3,267
Education							
Less than high school	3,686	2,715	3,134	3,279	3,658	3,861	4,214
High school: 1-3 years	3,148	2,262	2,559	2,877	3,365	3,565	3,654
High school: 4 years	2,669	2,393	2,276	2,380	2,839	3,065	3,023
College: 1-3 years	2,544	2,365	2,109	2,297	2,568	2,971	3,160
College: 4 years or more	2,302	---	1,931	2,115	2,317	2,385	2,898
Labor force status							
Not in labor force	2,942	2,397	2,479	2,634	3,032	3,348	3,480
In labor force	2,560	2,335	2,116	2,147	2,633	2,966	3,074
Working full-time	2,511	2,398	2,132	2,128	2,519	3,028	3,021
Working part-time	2,730	2,213	2,227	2,265	2,836	2,907	3,314
Not working	2,410	*1,455	1,508	1,961	2,766	2,760	2,791
Poverty level income							
Below poverty income	3,501	2,466	2,641	3,098	3,738	4,203	4,692
100-149 percent poverty income	3,564	2,319	2,363	3,230	3,930	4,477	4,799
150 percent poverty income or more	2,645	2,366	2,273	2,332	2,719	2,960	3,080
Religion and religious participation							
Protestant	2,710	2,246	2,260	2,402	2,798	3,088	3,198
More frequent	2,782	2,338	2,381	2,468	2,810	3,129	3,090
Less frequent	2,644	2,182	2,195	2,341	2,787	3,034	3,324
Roman Catholic	3,057	2,790	2,514	2,650	3,138	3,476	3,632
More frequent	3,225	2,804	2,626	2,725	3,284	3,630	3,795
Less frequent	2,840	2,782	2,409	2,563	2,929	3,251	3,330
Jewish	2,356	*3,040	1,569	2,094	2,058	2,583	2,771
Other or none	2,257	2,020	2,117	2,002	2,553	2,680	2,586
Age at first marriage							
Under 18 years	3,219	2,347	2,528	2,953	3,629	3,704	3,767
18-19 years	2,862	2,413	2,283	2,527	3,038	3,430	3,671
20-21 years	2,654	---	2,254	2,318	2,786	3,199	3,019
22-24 years	2,551	---	2,194	2,253	2,432	2,831	3,064
25-29 years	2,291	---	---	2,039	2,225	2,273	2,638
30 or more years	1,901	---	---	---	1,434	1,767	2,274
Timing of first birth							
Before marriage	3,672	2,358	3,131	3,279	3,889	4,140	4,481
After marriage	2,973	2,381	2,406	2,610	2,992	3,275	3,456
0-7 months	3,226	2,294	2,435	2,691	3,493	4,049	4,678
8-14 months	3,250	2,538	2,466	2,851	3,216	3,525	3,771
15 or more months	2,693	2,401	2,346	2,453	2,630	2,890	3,009
No live births	1,717	2,376	2,073	1,633	1,022	654	276
Contraceptive status							
Noncontraceptors	2,740	2,543	2,589	2,542	2,680	2,987	2,956
Pregnant, post partum, seeking pregnancy	2,727	2,635	2,665	2,685	2,734	3,084	3,144
Sterile	2,897	---	*409	2,118	2,520	3,152	3,044
Other	2,627	2,200	2,411	2,146	2,729	2,727	2,802
Contraceptors	2,801	2,251	2,202	2,406	2,948	3,267	3,503
Sterilization	3,328	*1,912	2,311	2,806	3,195	3,544	3,796
Pill, IUD	2,563	2,214	2,184	2,338	2,851	3,439	3,508
Other methods	2,752	2,450	2,233	2,307	2,839	2,859	3,257

Table 3. Number of total births expected and children ever born per 1,000 currently married women 15-44 years old by age and by selected characteristics: United States, 1973—con.

Selected characteristics	Total	Age in years					
		15-19	20-24	25-29	30-34	35-39	40-44
	Children ever born						
All women	2,180	479	921	1,651	2,575	3,054	3,251
Origin							
Spanish	2,641	*674	1,268	2,404	2,932	3,612	3,574
Other	2,149	459	897	1,604	2,558	2,998	3,233
Education							
Less than high school	3,210	810	1,832	2,627	3,358	3,640	4,146
High school: 1-3 years	2,707	587	1,694	2,434	3,133	3,424	3,617
High school: 4 years	2,072	342	835	1,719	2,584	2,959	2,976
College: 1-3 years	1,812	---	473	1,323	2,227	2,892	3,117
College: 4 years or more	1,470	---	*155	730	1,770	2,220	2,855
Labor force status							
Not in labor force	2,395	557	1,207	1,985	2,767	3,197	3,421
In labor force	1,877	324	580	1,124	2,267	2,865	3,042
Working full-time	1,731	282	498	1,042	2,153	2,908	2,983
Working part-time	2,239	*455	937	1,432	2,498	2,836	3,294
Not working	1,931	*89	*514	944	2,293	2,670	2,762
Poverty level income							
Below poverty income	2,734	579	1,150	2,101	3,488	3,975	4,557
100-149 percent poverty income	3,099	791	1,410	2,732	3,765	4,388	4,733
150 percent poverty income or more	2,043	407	837	1,531	2,399	2,836	3,041
Religion and religious participation							
Protestant	2,158	482	928	1,670	2,548	2,993	3,169
More frequent	2,267	551	959	1,747	2,546	3,040	3,041
Less frequent	2,039	434	912	1,599	2,550	2,932	3,318
Roman Catholic	2,359	*471	888	1,773	2,727	3,273	3,546
More frequent	2,525	*283	677	1,732	2,903	3,425	3,729
Less frequent	2,144	*589	1,089	1,820	2,475	3,051	3,209
Jewish	1,914	*540	*314	994	2,058	2,510	2,733
Other or none	1,467	*479	1,035	1,025	2,103	2,471	2,510
Age at first marriage							
Under 18 years	2,778	687	1,653	2,603	3,462	3,628	3,750
18-19 years	2,266	*218	1,007	2,019	2,838	3,361	3,652
20-21 years	1,999	...	512	1,503	2,591	3,106	2,976
22-24 years	1,825	...	*279	964	1,985	2,675	2,997
25-29 years	1,657	...	...	654	1,476	1,963	2,573
30 or more years	1,284	...	...	...	*333	1,108	1,950
Timing of first birth							
Before marriage	3,186	1,123	2,218	2,695	3,441	3,957	4,468
After marriage	2,626	1,154	1,474	2,036	2,761	3,181	3,424
0-7 months	2,842	1,128	1,602	2,278	3,387	3,952	4,651
8-14 months	2,966	1,139	1,561	2,361	3,039	3,419	3,733
15 or more months	2,317	1,228	1,325	1,774	2,309	2,806	2,980
No live births	...	...	...	...	...	...	...
Contraceptive status							
Noncontraceptors	1,825	*305	824	1,223	1,985	2,628	2,839
Pregnant, post partum, seeking pregnancy	1,056	348	780	1,088	1,40*	1,822	1,866
Sterile	2,897	---	*409	2,118	2,520	3,152	3,044
Other	2,166	*93	1,031	1,388	2,474	2,521	2,72E
Contraceptors	2,335	611	960	1,820	2,779	3,236	3,498
Sterilization	3,328	*1,912	2,311	2,806	3,195	3,544	3,796
Pill, IUD	1,832	621	872	1,669	2,647	3,390	3,506
Other methods	2,322	*503	830	1,542	2,558	2,811	3,247

TECHNICAL NOTES

DESIGN OF THE SURVEY: The National Survey of Family Growth (NSFG), initiated in 1971, is designed to provide data on fertility, family planning, and related aspects of maternal and child health. Field work for Cycle I was carried out by the National Opinion Research Center in 1973 and early 1974 with September 13, 1973, as the midpoint of the interviewing.

A multistage probability sample of women in the noninstitutional population of the conterminous United States was used. The sample of women eligible for the NSFG was between the ages of 15 to 44 years, inclusive, were currently married or previously married or were never married but had natural children presently living in the household. A detailed description of the sample design will be presented in a forthcoming report "Sample Design, Estimation Procedures, and Variance Estimation for a National Survey of Family Growth."

RELIABILITY OF ESTIMATES: Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken, using the same questionnaires, instructions, interviewing personnel, and field procedures. This chance difference between sample results and a complete count is referred to as sampling error. In addition, the results are also subject to nonsampling error due to respondent misreporting, data processing mistakes, and nonresponse. It is very difficult, if not impossible, to obtain accurate measures of nonsampling errors. These types of errors were kept to a minimum by the quality control procedures and other methods incorporated into the survey design and administration.

Sampling error, or the extent to which samples may differ by chance from a complete count, is measured by a statistic called the standard error of estimate. Approximate standard errors for estimated numbers and ratios from this survey are shown in tables I and II.

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the differences between the sample estimate and a complete count would be less than twice the standard error. The relative standard error is the ratio of the standard error to the statistic being estimated. In this report, numbers and percentages which have a standard error that is more than 25 percent of the estimate itself are considered "unreliable." They are marked with an asterisk to caution the user but may be combined to make other types of comparisons of greater precision.

In this report, terms such as "similar" and "the same" mean that any observed difference between two estimates being compared is not statistically significant. Similarly, terms such as

Table I. Approximate standard errors for estimated numbers of white and total women: 1973 National Survey of Family Growth

Size of estimate	Relative standard error	Standard error
50,000	30.0	15,000
100,000	21.2	21,000
200,000	15.0	30,000
500,000	9.5	47,000
1,000,000	6.7	67,000
2,000,000	4.8	95,000
5,000,000	3.0	151,000
10,000,000	2.2	216,000
20,000,000	1.5	311,000

Table II. Estimated standard errors of the ratio of total births expected per 1,000 women: 1973 National Survey of Family Growth

Base of ratio	Estimated ratio				
	1,000	2,000	3,000	4,000	5,000
20,000	232	531	826	1,121	1,416
50,000	147	336	523	709	896
100,000	104	238	370	502	634
200,000	74	168	262	355	448
500,000	47	107	166	225	284
1,000,000	33	76	118	160	202
2,000,000	24	54	84	114	144
5,000,000	16	35	54	74	93
10,000,000	12	26	40	54	68
20,000,000	9	20	30	41	51

"greater," "less," "larger," "smaller," etc., indicate that the observed differences are statistically significant. The normal deviate test with a 0.5 level of significance was used to test all comparisons. Lack of comment in the text between any two statistics does *not* mean the difference was tested and found not to be significant.

DEFINITION OF TERMS

Children ever born.—The number of children born alive to a woman.

Additional births expected.—The number of children a woman expects to give birth to in the future, including current pregnancy, if applicable. Women who were sterile or married to sterile men were classified as expecting zero additional births. Those physically able to have births were asked whether they and their husbands intended to have any babies in the future and, if so, how many. Women who did not know whether they intended any future births, or did not know a particular number they intended to have, were asked for the smallest and largest numbers they expect to have. Women who reported a particular number of children they intended to have were asked how sure they were about having specifically that number. Those uncertain of having that specific number were asked for the maximum and minimum numbers they expect to have.

For each woman, there is a maximum, minimum and central number of additional births expected. If a woman reported a specific number she intended to have, that was considered the central number she expected. If she was sure about it, that was also the minimum and maximum number she expected. For a woman who was not sure of having her intended number, the smallest and largest numbers she expected were her minimum and maximum numbers, respectively. For a woman who did not report any specific number of intended future births, the average of the smallest and the largest numbers expected became her central expected number. In this report, discussion of additional births expected refers to the central number unless specifically identified otherwise. Further discussion of this topic will be given in a forthcoming report in Series 23 of *Vital and Health Statistics*.

Total births expected.—The number of children a woman expects to have by the time she completes her childbearing. This number is the sum of the children ever born and the additional births expected. Minimum, maximum and central numbers of total births expected are calculated by using the minimum, maximum and central additional births expected. Unless specified otherwise, references to total births expected refer to the central number.

Births desired.—The number of children a woman would have if she could start life all over again and have just the number of children she wanted, knowing other things would have turned out just about the way they did for her and her husband.

Age.—The respondent's age at her last birthday before the interview.

Age at first marriage.—The woman's age at the time of her first marriage or commonlaw union.

Contraceptive status.—Women were classified as "noncontraceptors" if they were pregnant, post partum (last pregnancy terminated less than two months before interview) or they and their husbands were not using contraceptives because she was trying to become pregnant, they or their husbands were sterile for other than contraceptive reasons, or for some other reason. Women were classified as "contraceptors" if they or their husbands had had a sterilizing operation at least partly for contraceptive reasons, if they were using the pill, the IUD, or other methods of contraception.

Education.—The highest grade of regular school the woman had completed at the survey date.

Labor Force Status.—A woman is categorized as being in the labor force if she was working full-time or part-time, had a job but was not at work because of temporary illness, vacation, or a strike, or if she was unemployed, laid off, or looking for work. A woman is classified as working full-time if she works 35 or more hours a week.

Marital Status.—Marital status classifications are married, widowed, divorced, separated, or never married. Married persons include those who reported themselves as married or as informally married, such as living with a partner or commonlaw spouse. This classification includes those who are temporarily separated for reasons other than marital discord such as vacation, illness, or Armed Forces. Persons who are separated legally or informally for reasons of marital discord are classified as separated. All tables in this report are based upon currently married women or others whose marital status at the time of the interview was "married."

Poverty level.—The poverty index ratio was calculated by dividing the total family income by the weighted average threshold income of nonfarm residents, head under 65, based on the poverty levels shown in the U.S. Bureau of the Census, *Current Population Reports,* Series P-60, No. 98, "Characteristics of the Low-Income Population, 1973," table A-3. This definition takes into account the sex of the family head and the number of persons in the family. Total family income includes income from all sources for all members of the respondent's family.

Race.—Classification by race of the woman interviewed, based on interviewer observation, was reported as Negro, white, or other.

Religion and religious participation.—Women were asked whether they were Protestant, Catholic, Jewish or something else. Protestant includes most of the Christian groups other than Roman Catholic. The "other" category includes non-Christian religions and no religion.

Protestant women are classified as having more frequent religious participation if they attend religious services twice a month or more, and having less frequent participation if attendance is once a month or less.

Catholic women are classified as having more frequent religious participation if they receive communion several times a year or more, and less frequent participation if they receive communion once a year or less. Sample reliability makes subclassification of Jewish or "other or none" religious categories by participation impractical.

Spanish origin.—A respondent was classified as being of Spanish origin if she reported her origin or descent as Mexican, Chicano, Mexican American, Puerto Rican, Cuban, or other Spanish.

Timing of first birth.—The first birth is classified as occurring before or after the first or only marriage. First births occurring after marriage are further classified by the number of months between marriage and the birth.

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